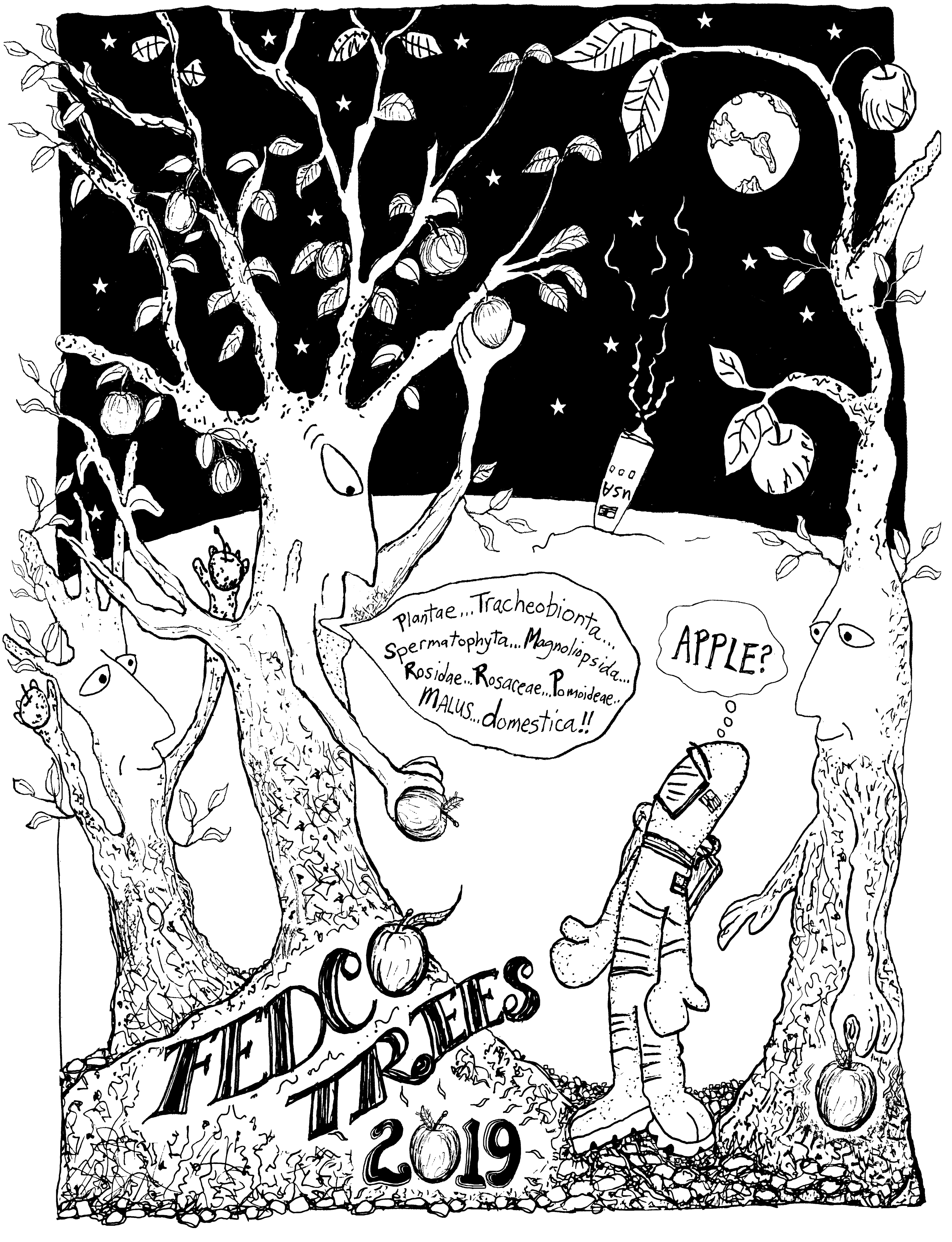
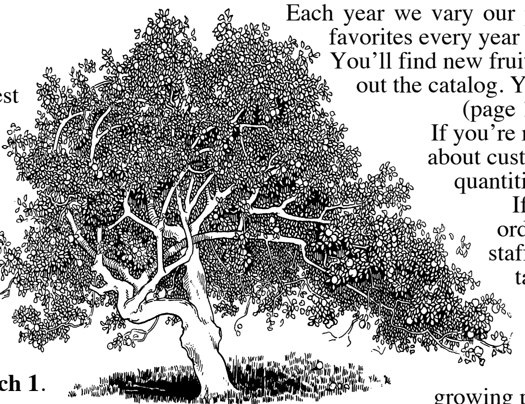

Plantae...Tracheobionta...
Spermatophyta...Magnoliopsida...
Rosidae...Rosaceae...Pomoideae...
MALUS...domestica!!
APPLE?
USA
FEDCO TREES
2019

FEDCO TREES 2019



Welcome to Fedco Trees' 35th annual order. Our goal is to provide the hardiest and healthiest plants available for cold climates, while supporting plant diversity, small-scale local agriculture, and a fair, cooperative and responsible workplace. Our no-frills operation helps keep plants affordable. Consider ordering in a group with co-workers, friends or neighbors to further minimize your costs. Please note our discount structure for large orders, our discount deadline, and the "Small & Light" shipping option for those who desire only items that don't require a giant box.

This year's **final ordering deadline is March 1**. Our early pickup option (page 34) was a success, and thanks to your positive feedback, we're offering it again. (Please note that we now have a minimum amount required to place a pickup order.) As usual, we'll have loads of plants at our Tree Sale with many of the varieties listed here and some surprises, along with vegetable seedlings, potted herbs, perennials and more. Hope to see you there!

Each year we vary our plant selections. We offer most of the old favorites every year and rotate through dozens of new offerings. You'll find new fruit trees, ornamentals and perennials throughout the catalog. You can still become a MOFGA tree steward (page 14) by purchasing a rare historic apple tree.

If you're running a large orcharding operation, ask us about custom bench grafts. This option provides large quantities of trees at an affordable rate.

If you have questions or concerns about your order, please contact us. We don't have a huge staff so if we don't respond quickly, don't hesitate to remind us; we are in business to serve you. If you haven't already, check out our Seeds and Bulb catalogs. If you enjoy this one, we're pretty sure you'll like those, too.

We invite you to share your experiences growing plants with us. Many of our selections result from your suggestions. If you know of something growing near you that we should be offering, or if you are interested in growing for us, please write to us. We welcome your comments, suggestions, recipes, anecdotes and jokes.

–Jen Ries & the Fedco Trees Team

Taking on the Nomenclature

Throughout this edition of the catalog, you'll find several musings on plant names. We attempted to demystify botanical nomenclature, though we may have succeeded in adding to the confusion! Still, it's a good subject to understand a little if you spend much time talking about plants. Their names are vessels of history, folklore and science and hold clues to past adventures, desires, mistakes.

Naming things is not a behavior particular to humans. Crows and dolphins, for example, use individual sounds to identify each other or elements in their environment. Using names to classify items, however, may be a human compulsion born not only of necessity but also of amusement or pleasure or a sense of creativity. The names evoke curiosity in us and can draw us in the way nectar draws the butterfly. Aren't you curious about Westfield Seek-No-Further, ye who has been questing for the perfect apple? The Maidenhair Fern is one of my favorites, and I find myself gleefully chanting the Latin name, *Adiantum pedatum*, as I traipse through the woods looking for these lovelies. It's music on my tongue: *Adiantum pedatum…* Ad-ee-AN-tum ped-AY-tum! The birds look at me sideways, trying to decipher my strange song. Other names repel us. You'll never see a Pinky Winky Hydrangea in this catalog. Sorry, can't do it.

We plant-lover-word-lovers had fun with what may be our nerdiest catalog theme ever. We hope you enjoy it, too. If not, you can always veg out on the pretty pictures.

OUT OF THE DEEP

Speaking of names, customers sometimes ask us where the name Fedco comes from. It is an abbreviated version of Maine Federation of Cooperatives, a now-defunct food coop, the parent organization from which Fedco Seeds was born in 1978. Fedco Trees grew from Seeds a few years later. CR Lawn, founder of Fedco Seeds, officially retired this year (see page 29). We'll miss hearing him belt out Dylan in the hallways, but are glad to know he's only a phone call away, still gardening on a grand scale, thinking about food and the seed industry. If you're lucky, you might catch him speaking at a public event. Thank you, CR, for all your guidance through the years and for giving Fedco to the world.

Adiantum pedatum

John Bunker, Lauren Cormier and Jen Ries write tree and shrub descriptions. Laura Childs writes perennial and bulb descriptions. Elisabeth Benjamin edits with help from Susan Kiralis and Emily Skrobis. Joanna Linden proofreads. Laura Childs, Alicia Letteney, Melissa May and Elizabeth Smedberg do layout.

contact us: questions@fedcoseeds.com or 207-426-9900

Fedco Trees Guarantee Policy

Please inspect your order upon receipt and notify us immediately if something is missing or incorrect. Occasionally, plants incur damage during shipping. If limbs or tops are broken, prune to the next good bud. The plant will do fine. We guarantee to ship you a plant that is healthy, will leaf out, and is true to name. We expect that you will care for the plant from the moment it arrives, plant it in a timely fashion, water it (about 1" per week after bud swell) and protect it (see pp. 67-70.) Because we have no control over growing conditions such as weather, soil, cultural practices, pests, wildlife, or weed whackers, we cannot guarantee a plant's survival past leaf break. If you see no sign of life, scratch the outer bark with your fingernail. If the inner bark is green, the tree is still alive. Some plants take longer than others to break dormancy, so you may need to be patient. If you have thoroughly cared for the plant and it dies, we will refund the cost of the plant. In some cases, we may choose to issue a partial refund. We cannot offer replacements. Inevitably, some plants die through no fault of yours or ours. If a plant dies during the first growing season, don't hesitate to contact us. We will work with you to determine what went wrong. We are partners in the endeavor of filling the planet with plants and we want you to succeed. **Claims must be made no later than July 31st of the year the plant was received.**

We limit our liability in all instances to the purchase price. The liability of Fedco Seeds, Inc., for breach of warranty, or any loss or damages arising out of the purchase or use of our products, including loss or damages resulting from any negligence whatsoever on our part, or strict liability in tort, shall be limited to the purchase price. By acceptance of the merchandise, the buyer acknowledges that the limitations and disclaimers herein described are conditions of sale, and that they constitute the entire agreement between the parties regarding any warranty or liability. Failure to assert claims within the aforementioned time frame renders this warranty null and void.

For complete **Ordering Instructions**, see page 34.

- Order online at **fedcoseeds.com** (click on Fedco Trees). You can also check product availability and see color photos of most of our trees, shrubs and perennials.
- **Volume discounts**! See the order form (p. 35) for details.
- **Group ordering:** Save on shipping and earn volume discounts by ordering with friends. Learn more on p. 34.
- **Shipping:** We ship most orders via UPS from late March to mid-April. For special shipping options, see p. 34.
- **Pickups:** If you're nearby, or just interested in all the hoopla, come get your order at our warehouse. (We require a minimum subtotal of $50 for pickup orders.)

Important dates & deadlines

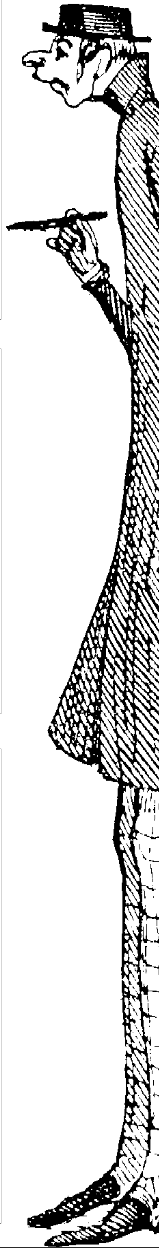
- **Volume discount deadline**, Friday, **January 11**, 2019
- **Ordering deadline** (except scionwood), Friday, **March 1**
- **Shipping** by UPS starts late March.

- **Scionwood order deadline**, Friday, **February 15**
- **Shipment of scionwood** & rootstock starts around March 11.

- **Order pickup** at our Tree Sale, Fri.–Sat., **April 26–27**, at our Hinckley Road warehouse in Clinton, Maine.
- **Public Tree Sale**, Fri.–Sat., **May 3–4**. Sale open to the public; orders still available for pickup. **Sale hours 9:00 to 3:00 each day.**
- **Early pickup** at our warehouse before the sale, Tues.–Thurs., April 23–25, from 9–3. You will *not* be able to shop. Less fun, shorter lines.

New for 2019

- New Fruits, Berries, Grapes & Hops
- Hazelbert
- Venus Carolina Allspice
- Nanus Ninebark
- Flowering Almond
- Ram's Horn Willow
- Steeplebush
- Blackberry Lily
- Blazing Sunset Avens
- Itoh Peonies
- Fern Leaf Peony
- Wild Senna
- New Crabapples!
- New Roses!
- New Heathers!
- New Perennials!



Where Is Everything?

Ordering Instructions p. 34
Order Forms center
Perennial Planting Guide p. 55
Tree Planting Guide 67-70
Complete Index p. 71

begin on page
Apples 4
Rootstock & Scionwood 16, 38
Pears 17
Stone Fruits 19
Raspberries 24
Blueberries 25
Strawberries 27
Grapes 28
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Nuts 31
Shade Trees 31
Conifers 33
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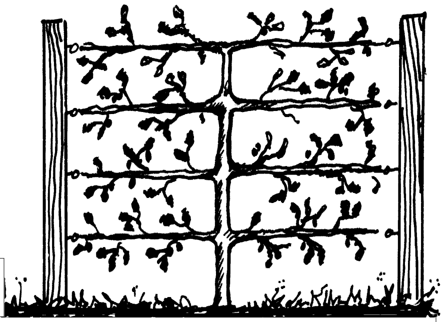
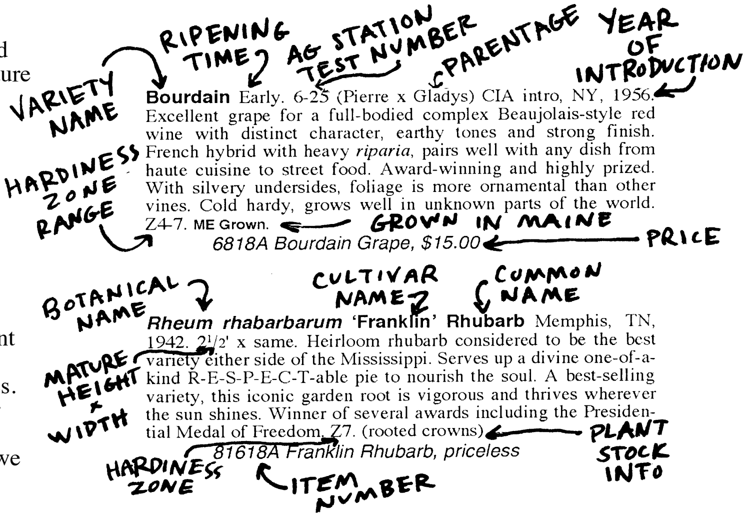


Our Planting Guide is incorporated into the catalog. **Save your catalog** for planting and cultural instructions. The catalog is also available online.

Our Variety Descriptions –

- **All trees and plants are bare-rooted** (except where noted), and even a large order can fit into a station wagon. Because of the nature of dealing with living commodities, **size variations will naturally occur** within each crop.
- For fruit trees and berries, the **exact dates of peak ripeness** will vary from place to place.
- The **zone hardiness rating** will aid you in determining whether a plant will be hardy for you. The average minimum temperature in your area determines your zone (chart on p. 71). Apple descriptions have minimum and maximum zones because apples typically need cold climates to produce the best fruit. All other plants list the coldest hardiness zone. Your own soil conditions, microclimate and topography will be equally important in determining the best varieties for you.
- Please note **pollination requirements** for fruits, nuts and berries. Some plants are self-pollinating, others require a second plant for pollination, and others require a second variety.
- We strive to give you accurate information about all the plants we sell. If you notice inaccuracies, please let us know.


Bourdain Early. 6-25 (Pierre x Gladys) CIA intro, NY, 1956. Excellent grape for a full-bodied complex Beaujolais-style red wine with distinct character, earthy tones and strong finish. French hybrid with heavy *riparia*, pairs well with any dish from haute cuisine to street food. Award-winning and highly prized. With silvery undersides, foliage is more ornamental than other vines. Cold hardy, grows well in unknown parts of the world. Z4-7. ME Grown.

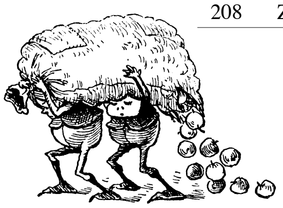
6818A Bourdain Grape, $15.00

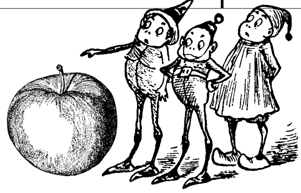
***Rheum rhabarbarum* 'Franklin' Rhubarb** Memphis, TN, 1942. $2^{1}/_{2}$' x same. Heirloom rhubarb considered to be the best variety either side of the Mississippi. Serves up a divine one-of-a-kind R-E-S-P-E-C-T-able pie to nourish the soul. A best-selling variety, this iconic garden root is vigorous and thrives wherever the sun shines. Winner of several awards including the Presidential Medal of Freedom. Z7. (rooted crowns)

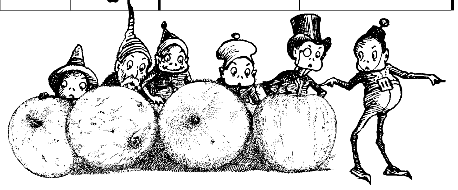
81618A Franklin Rhubarb, priceless

Pick the right apple!

Item	Name	Season	All-Purpose	Fresh Eating	Storage	Cooking	Pies	High Flavor	Hard Cider Bittersharp/ Sharp	Hard Cider Bittersweet/ Sweet
105	Ashmead's Kernel	winter		🍎	🍎			🍎	sharp	
107	Baldwin	winter	🍎	🍎	🍎	🍎	🍎		sharp	
108	Bedan	fall								bittersweet
111	Binet Rouge	fall								bittersweet
112	Bitter Pew	fall							bittersharp	
113	Black Oxford	winter	🍎	🍎	🍎	🍎	🍎		sharp	
115	Blue Pearmain	winter	🍎	🍎	🍎	🍎	🍎			
119	Calville Blanc d'Hiver	winter	🍎	🍎	🍎	🍎	🍎		sharp	
120	Canadian Strawberry	fall		🍎				🍎	sharp	
123	Chestnut	fall		🍎		🍎		🍎		
124	Chisel Jersey	fall								bittersweet
126	Cora's Grand Greening	fall	🍎	🍎		🍎				
127	Cortland	fall	🍎	🍎		🍎	🍎		sharp	
128	Cox's Orange Pippin	fall		🍎				🍎		
129	Dabinett	fall								bittersweet
132	Duchess of Oldenburg	summer	🍎	🍎		🍎	🍎			
133	Dudley Winter	fall	🍎	🍎		🍎	🍎			
134	Ellis Bitter	fall								bittersweet
135	Esopus Spitzenburg	winter	🍎	🍎	🍎			🍎	sharp	
137	Fameuse	fall	🍎	🍎		🍎		🍎		
141	Gnarled Chapman	fall								bittersweet
142	Golden Russet	winter		🍎	🍎			🍎	sharp	
143	GoldRush	winter		🍎	🍎			🍎	sharp	
144	Granite Beauty	winter	🍎	🍎	🍎	🍎		🍎		
145	Gray Pearmain	winter	🍎	🍎	🍎			🍎		
146	Grimes Golden	fall	🍎	🍎	🍎	🍎	🍎		sharp	
147	Harrison	fall							sharp	
148	Harry Masters Jersey	fall								bittersweet
149	Honeycrisp	winter		🍎	🍎			🍎		
155	Keepsake	winter	🍎	🍎	🍎	🍎				
156	King David	fall	🍎	🍎	🍎	🍎	🍎	🍎		
158	Kingston Black	fall							bittersharp	
159	Liberty	fall	🍎	🍎		🍎				
161	Major	fall								bittersweet
163	McIntosh	fall	🍎	🍎		🍎				
164	Medaille d'Or	fall								bittersweet
165	Milden	winter	🍎	🍎	🍎	🍎	🍎			
167	New Brunswicker	summer	🍎	🍎		🍎	🍎			
169	Northern Spy	winter	🍎	🍎	🍎	🍎	🍎	🍎	sharp	
170	Opalescent	fall		🍎	🍎	🍎		🍎		
174	Porter	fall	🍎	🍎		🍎		🍎		
175	Porter's Perfection	fall							bittersharp	
178	Red Astrachan	summer				🍎	🍎			
179	Red Gravenstein	summer	🍎	🍎		🍎	🍎			
180	Redfield	fall				🍎	🍎		sharp	
182	Rhode Island Greening	fall	🍎	🍎	🍎	🍎	🍎			
183	Ribston Pippin	fall	🍎	🍎	🍎	🍎		🍎	sharp	
185	Roxbury Russet	winter	🍎	🍎	🍎	🍎		🍎	sharp	
186	Rubicon	winter	🍎	🍎	🍎	🍎	🍎			
190	Spice Sweet	summer		🍎			🍎	🍎		
191	Starkey	fall		🍎				🍎		
193	Sweet Sixteen	fall	🍎	🍎	🍎	🍎	🍎	🍎		
194	Tolman Sweet	fall	🍎	🍎	🍎	🍎				sweet
195	Twenty Ounce	fall				🍎	🍎			
197	Wealthy	fall	🍎	🍎		🍎	🍎		sharp	
198	Westfield Seek-No-Further	fall		🍎	🍎			🍎		
199	Wickson	fall		🍎				🍎	sharp	
200	Williams Pride	summer		🍎		🍎				
204	Wolf River	fall				🍎	🍎			
205	Yarlington Mill	fall								bittersweet
206	Yellow Bellflower	winter	🍎	🍎	🍎	🍎	🍎			
207	Yellow Transparent	summer		🍎		🍎				
208	Zestar	summer		🍎				🍎		



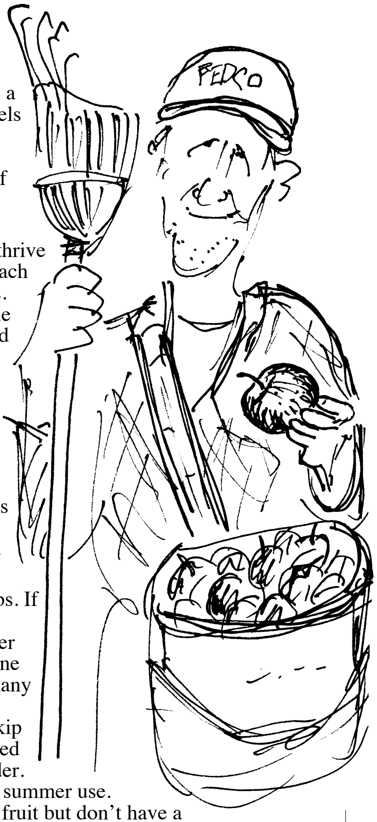




Ashmead found a fortuitous **Kernel**. Woodpeckers discovered the old tree but Luammi **Baldwin** took the credit. **Bedan** may be a contraction of *bec d'ane*, 'snout of donkey'— yum. A **Bitter**

Apples *Malus* spp.

Summer apples ripen in summer, are generally crisp only for a short period, do not store well, and are often best for cooking.
Fall apples store longer and are useful for a wide variety of purposes.
Winter apples ripen mid to late fall, store well, and reach their best flavor after weeks, or even months, of storage.
Dessert apples are delicious eaten raw.
Cider apples are especially suited to making fermented "hard" cider. Some cider apples are also good dessert fruit, but most are not. See the apple chart (opposite) and the cider sidebar on page 7 for more info.
Subacid means tart!
Russet or **russeting** is a skin texture (fairly common on apple varieties and on a few pears and potatoes) that looks and feels somewhat like suede.
Bloom is a naturally occurring dust-like yeast film on the skin of some varieties of apples, plums, grapes and blueberries.

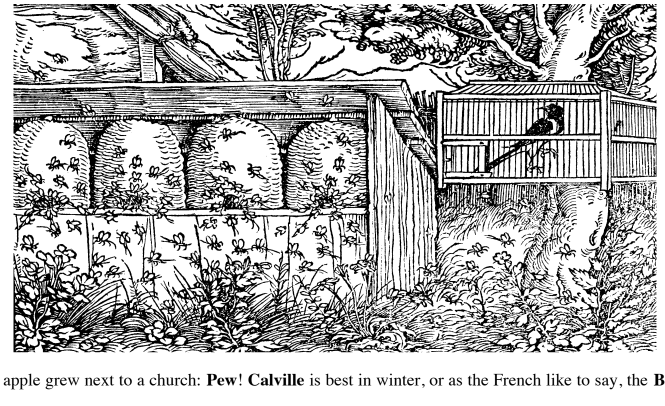


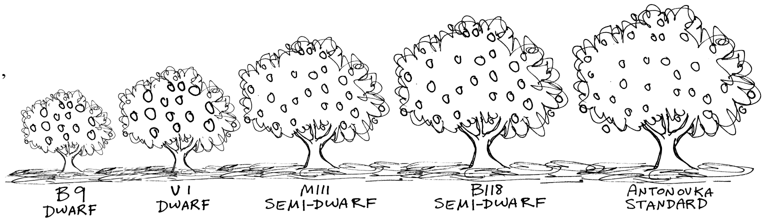
Hardiness zone ranges: Each apple variety has a climate range where it will thrive and produce its best fruit. At the end of each apple description we list a range of zones. For example, Z3-4 signifies that this apple will reach perfection in Zones 3 and 4 and that we don't recommend it farther south even though it might be plenty hardy. Z4-6 means that this apple will reach perfection in Zones 4, 5 or 6. Although we have received reports from southern California that some of our rarest Maine apples are thriving in Zone 10A, we still suggest you use this guide to select apples most appropriate to your area.

Choosing a variety: Not every variety is right for you. **All-purpose** apples are just that—they're good for a bunch of jobs. If you're planting just one tree, start there. However, if you're a history buff, consider the historical varieties and maybe plant one that originated nearby. If you don't eat many apples fresh but love pies, go for the pie apples. If you're a dessert connoisseur, skip all the others and go for the highly flavored dessert varieties. Some are strictly for cider. Some are great to put out at the camp for summer use. Some are perfect for those who want fall fruit but don't have a root cellar. Others keep all winter and into the following summer. Read the descriptions and consult the chart. If you have a question about a specific variety, drop an email: john@fedcoseeds.com. We'll try to help!

Care: Apple trees are adaptable to a variety of soils and climates, though they prefer well-drained fertile soil. See pages 67–70 for information on soil preparation, planting and pest control. Varieties that bear fruit annually are noted in the descriptions; others normally bear every other year. With diligent annual pruning and thinning, most apples will produce an annual crop, one heavy, the next light.

Pollination: **All apple trees require a second variety for pollination**, but any apple or crabapple blooming within a quarter mile will probably do. Customers frequently ask us about pollination and apples. Early season, midseason, late season bloomers—what does it all mean? Should you be in a tizzy about pollination? No. If there is at least one other apple tree somewhere in your neighborhood, the bees will do their thing, and you'll get fruit. That other tree can be a Fedco apple of a different variety. It can be a wild roadside apple tree. It can be an ornamental crabapple. It can be old or young, in your yard or your neighbor's. But it must be different from yours. In other words, avoid planting ten Honeycrisps if no other apples are in sight. Most apples flower at about the same time so timing is almost never an issue. However, if you live on a desert island with only an early bloomer and a late bloomer, you should plant a midseason bloomer, too.





Standard rootstock: Rootstock determines the size, longevity, hardiness and growth habits of a tree. Most of the apples we offer are on standard (full-sized) Antonovka rootstock. Standard trees have deep, substantial—and therefore hardier—root systems. By selecting the varieties appropriate to your district, grafted on standard rootstock, you may well be planting a tree that will be picked by your grandchildren's grandchildren. Standard trees will grow to be large, but you can manage the size with pruning. The largest trees in our orchard are now about 30 years old, yet the tallest are well under 20' due to careful pruning. Trees on standard stock are 3-6'.

Although standard-sized apple trees may be planted as close as 10–15' apart, they were typically planted 30' apart in 19th-c. orchards. We generally plant standard trees 20–25' apart with good results.

We offer bundles of rootstock for grafting on page 16.

Semi-dwarf and dwarf rootstocks: After an enthusiastic response from customers, we continue to offer an assortment of semi-dwarf and dwarf apples on Bud 118, M111, Bud 9 and V1 rootstocks. Each has great advantages for some growers, but beware! These size-controlling rootstocks also have their limitations. Please read on and decide if they are what you want. If you are uncertain, stick with the good old standards. Trees on Antonovka (standard rootstock) are extremely rugged, hardier, more tolerant of drought and poor soils, very long-lived, and more capable of thriving under a regime of benign neglect. Trees on semi-dwarf stock are 2½-5'; dwarf stock, 2-5'.

• **Bud 118 semi-dwarfing** rootstock produces a tree that is about **85–90%** of standard size or even larger. Sometimes Bud 118 trees are called semi-standards or even standards. Plant about 20–25' apart. Considered to be more precocious than standards, and probably more productive. Very hardy, though not as hardy as Antonovka.

128B Cox's Orange Pippin
135B Esopus Spitzenburg
143B GoldRush
149B Honeycrisp
159B Liberty
185B Roxbury Russet
208B Zestar

• **M111 semi-dwarfing** rootstock produces a tree that is about **65–80%** of standard size. Sometimes M111 trees are called semi-standards. You can plant them closer together than standards, about 15–20' apart. M111 may not be more precocious than trees on standard. However it will likely be more productive. It has a relatively shallow spreading root system, does well in light soils, and is relatively drought tolerant. It is less well-rooted, not as long-lived, and not as hardy as Antonovka. (See also crabapples, p. 44-45)

105C Ashmead's Kernel
107C Baldwin
111C Binet Rouge
112C Bitter Pew
113C Black Oxford
119C Calville Blanc d'Hiver
124C Chisel Jersey
127C Cortland
129C Dabinett
134C Ellis Bitter
141C Gnarled Chapman
142C Golden Russet
146C Grimes Golden
147C Harrison
148C Harry Masters Jersey
149C Honeycrisp
158C Kingston Black
163C McIntosh
167C New Brunswicker
169C Northern Spy
175C Porter's Perfection
178C Red Astrachan
186C Rubicon
199C Wickson
205C Yarlington Mill
468C-478C all crabapples

• **Bud 9 dwarf** rootstock produces a tree that is very small. It is a true dwarf, about a quarter the size of standard. This makes it extremely easy to spray, prune and pick. It requires way less space in your yard and will fruit at a very early age. You can plant trees 5–10' apart. On the other hand, it will not live nearly as long as those grafted onto Antonovka. It will be less well-rooted, more susceptible to drought and have more difficulty accessing soil nutrients. Trees should be staked for support. Hardy, but not nearly as hardy as Antonovka.

113D Black Oxford

• **V1 dwarfing** rootstock produces a small dwarf tree about **55%** the size of a standard tree. Approximately the same size as those grafted onto M26, somewhat larger than Bud 9. You can plant trees 5–10' apart. Trees on V1 are very hardy, somewhat fireblight resistant, sucker very little and should be staked or wired for support. We have been happy with our V1 trials. V1 (Kerr x M9) is one of several dwarfing rootstock introductions from the Horticultural Experiment Station in Vineland, Ontario, Canada, 1958.

107E Baldwin
127E Cortland
149E Honeycrisp
159E Liberty
163E McIntosh

apple grew next to a church: **Pew**! **Calville** is best in winter, or as the French like to say, the **Blanc d'Hiver**. What's exotic as a **Canadian** and sweet as a **Strawberry**? **Cherryfield** has more

Rootstocks

We offer most apple varieties on standard-sized Antonovka rootstock. Where

A follows the item number in the apple section, the variety is on standard rootstock.
B indicates the variety is on Bud 118 rootstock,
C indicates M111,
D indicates Bud 9, and
E is V1.

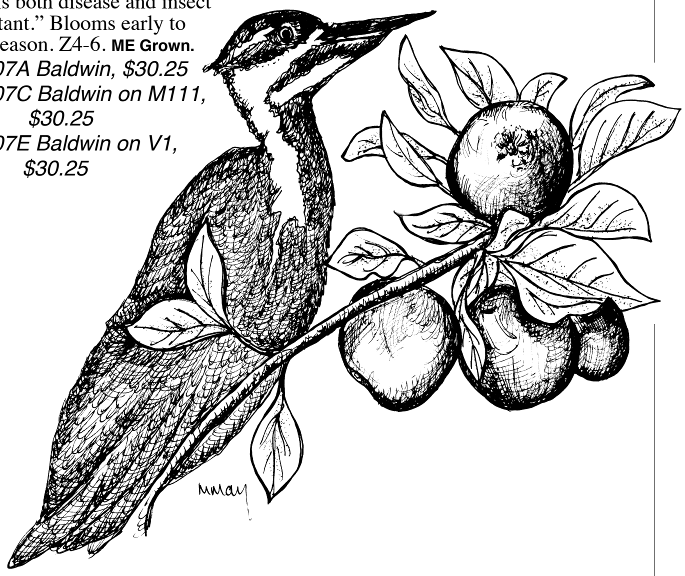
For more about rootstock, see pages 5 and 16.

Ashmead's Kernel Winter. Unknown parentage. Gloucester, England, about 1700. Possibly a seedling of Nonpareil. An after-dinner apple of unparalleled quality. Not for those who like mild sweet apples. Each bite is an intense aromatic sting of sharp and sweet, with hints of other indescribable but absolutely wonderful tastes and aftertastes. Beginning to show up here and there in commercial orchards. A good sharp addition to hard cider. Medium-small oblate and lopsided orange-gold-green russet fruits ripen in October. Store until New Year to reach perfection. Keeps until they're all gone. Moderately vigorous tree may bear irregularly, but it's worth the wait. Somewhat scab resistant. Blooms midseason. Z4-7. **ME Grown.**

105A Ashmead's Kernel, $30.25
105C Ashmead's Kernel on M111, $30.25

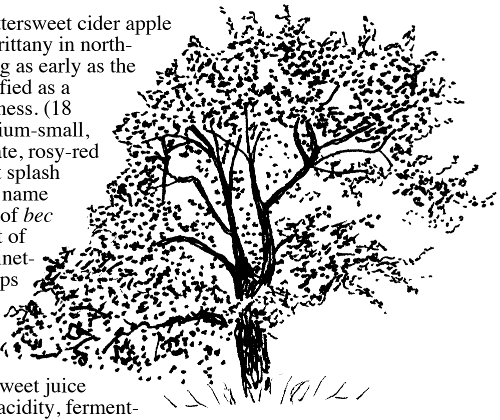
Baldwin Winter. Wilmington, MA, about 1740. Also called **Butters Apple** or **Woodpecker**. Discovered on the Butters Farm by a surveyor planning the Middlesex Canal and noted as a favorite site for local woodpeckers. By 1850 Baldwin was the standard all-purpose home and commercial variety wherever it was grown. It remained dominant in Maine until the terrible winter of 1934 when tens of thousands of trees perished and McIntosh became king. Large round-conic thick-skinned fruit, almost entirely blushed, mottled and striped with red and deep carmine. Hard crisp juicy yellowish flesh makes excellent eating and cooking. Keeps till spring. Makes top-quality hard cider, blended or alone. Vigorous adaptable hugely productive long-lived healthy tree. When grower Dave Gott asked the late renowned entomologist Ron Prokopy his opinion of Baldwin, Ron replied that the apple is "not practical commercially due to biennialism but the *only* apple that is both disease and insect resistant." Blooms early to midseason. Z4-6. **ME Grown.**

107A Baldwin, $30.25
107C Baldwin on M111, $30.25
107E Baldwin on V1, $30.25



The Origin of Botanical Names

Carl Linnaeus (1707-1778), also known as Carl von Linné and Carolus Linnaeus, was a Swedish naturalist and physician with a deep love for plants. During his time at university, he received a grant to mount an expedition to Lapland in northern Sweden to study its flora and fauna and to learn about the traditions of the Sami people. In six months he traveled 2000 miles observing birds, rocks and plants. His extensive notes identified more than 150 plants not previously described in scientific records. He wanted a practical way to classify species without having to write long descriptions of each one, the customary practice up to that point. Building on bodies of work created by scientists before him, Linnaeus presented a formal taxonomic ranking system that grouped life into Kingdom, Phylum, Class, Order, Family, Genus, Species. Linnaeus used this format in his 1753 book *Species Plantarum*. Eventually, from this taxonomy, a Latinized two-name system for identifying plants by genus and species would evolve and become the internationally adopted binomial nomenclature system for classification.



Bedan Fall. Mild bittersweet cider apple from Normandy or Brittany in northwestern France, dating as early as the 14th c. Usually classified as a "sweet." Slight bitterness. (18 Brix, 1.075 SG) Medium-small, roundish, mostly oblate, rosy-red blushed, with a russet splash around the stem. The name may be a contraction of *bec d'ane* meaning 'snout of the donkey', or a cabinetmaker's chisel. Perhaps Bedan is related to the English cider apple Chisel Jersey. Maybe "chisel" refers to the apple's sweet juice that cuts through the acidity, fermenting into a beautiful Normandy-style cider. There is some confusion around the names Bedan and Bedan des Parts. Both are old varieties from northern France. In the U.S. the names may be used interchangeably, but this one is most likely Bedan. Scionwood provided by Eric Shatt of Redbyrd Cider in Trumansburg, NY. Blooms medium-late season. On trial in Zone 4, but probably Z5-8. **ME Grown.**

108A Bedan, $30.25

Binet Rouge Late Fall. Traditional French mild bittersweet cider apple. Unknown parentage. Probably from Normandy, France. Bore and Fleckinger classify it as sweet. (SG 1.056–1.072) Small round angular fruit, somewhat oblate and truncate, with a deep red blush covering about three quarters of the fruit. Medium to small russeted stem area and small prominent dots. Recommended for trial in most cider-apple growing districts. Eric Shatt provided scionwood. Blooms mid-late season. Probably Z4-7. **ME Grown.**

111C Binet Rouge on M111, $30.25

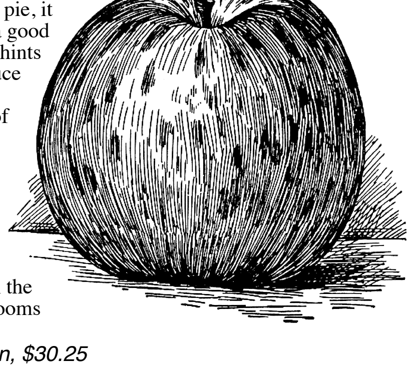
Bitter Pew Fall. Bittersharp cider apple. Discovered and introduced by John Bunker and Laura Sieger, Palermo, ME, 2015. Mildly acidic, highly bitter and slightly astringent. Not for fresh eating! Strongly flavored juice, recommended for blending. (1.048 SG) Will add complexity and lots of pizzazz to even the dullest cider. Best pressing in the first two weeks of November. At our cider tasting in July 2018, the 'Bitter Pew' cider received unanimous thumbs up. Medium-sized angular conic fruit, deep dark lime green with a purple-red blush and prominent whitish dots. We found the medium-aged multi-stemmed tree in the remnants of an old orchard. When one of the old trees died decades ago, the rootstock sprouted and like a phoenix rose this wonderful tree. Now on trial in multiple locations. Blooms midseason. Probably Z4-7. **ME Grown.**

112C Bitter Pew on M111, $30.25

Black Oxford Winter. Unknown parentage. Paris, Oxford County, ME, about 1790. This outstanding apple, a favorite long ago around much of Maine, has made a huge comeback. Our best seller until Honeycrisp came along. Medium-sized round fruit, deep purple with a blackish bloom. From a distance you might think you'd discovered a huge plum tree. Excellent pies, superb late cider. Leave the skins on for a delightful pink sauce. Best eating late December to March, but we've eaten them in July and they were still quite firm and tasty. They get sweeter and sweeter as the months go by. Good cooking until early summer. Some insect and disease resistance. Unusual light pink blooms early to midseason. Z4-5. **ME Grown.**

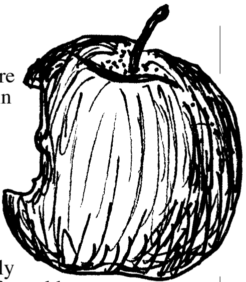
113A Black Oxford, $30.25
113C Black Oxford on M111, $30.25
113D Black Oxford on B9, $30.25

Blue Pearmain Fall-Winter. Thought to be from Middlesex County, MA, 1700s. Our favorite for baked apples, it was made to be stuffed. Moderately juicy flesh, firm, dense and slightly crisp, sweet with a bit of a tart background flavor. Incredibly beautiful medium to very large fruit is streaked and splashed with purplish red, mottled with russet and covered with a distinct dusty blue bloom. In a pie, it has just enough firmness and a good balance of sweet and tart with hints of pear. Tart coarse yellow sauce cooks up in a couple minutes. Tasty eaten out of hand. One of New England's most famous varieties. Mentioned by Henry David Thoreau as a favorite in his wonderful essay "Wild Apples." Grown throughout much of Maine for well over 200 years. Massive trees still found here and there. Keeps in the root cellar until midwinter. Blooms midseason. Z4-6. **ME Grown.**



115A Blue Pearmain, $30.25

to offer than a giant blueberry factory. **Chisel Jersey** may come from *jaisy*, meaning 'bitter,' in Somerset dialect. Miss **Cora** grew a large **Green** apple: **Grand**! **Dabinett** sounds so French,



Calville Blanc d'Hiver Winter. Unknown parentage. France or Germany, 16th c. Also called **White Winter Calville**. Famous as a dessert and cooking apple for more than 400 years. Steve Wood of Poverty Lane Orchards in Lebanon, NH, called it "the best culinary apple in the world." Large flattish pale green-yellow fruit with deep ribs and a dotted orange-red blush. Creamy-white aromatic fine-grained juicy flesh with a sweet distinctive effervescent flavor. Also recommended for vinegar, fresh cider and as a sharp (acid) component in fermented cider. Should be stored a month to reach peak flavor. Will keep until midwinter. Very vigorous strongly upright vase-shaped tree with good branch angles. Not for coldest areas though certainly hardy to Zone 4. Blooms midseason. Z4-7. **ME Grown.**

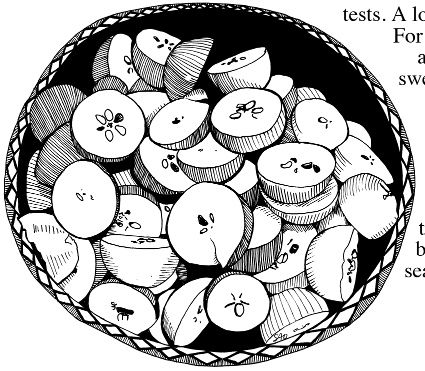
119A Calville Blanc d'Hiver, $30.25
119C Calville Blanc d'Hiver on M111, $30.25

Canadian Strawberry Fall. Unknown parentage. Solon, ME. Beautiful superb-tasting dessert apple. Surprisingly juicy distinctly tart full-flavored medium-to-large round-conic fruit. Rich buttery-yellow skin overspread with a veil of vibrant red-orange. Very good early season cider. Perfectly ripe at the end of September in central Maine where, in a good year, you won't find a better apple. At our Common Ground Fair taste tests, it usually vies for the crown with Cox's Orange Pippin. It was a split decision in 2015. In 1996 the late Roy Slamm convinced me to visit and subsequently propagate nursery stock from the three ancient "Strawberry" trees on his South Solon farm, thus saving the apple from almost certain extinction. Now spreading throughout Fedcoland. Fruit keeps about a month. Blooms midseason. Not to be confused with Chenango Strawberry. Z4-5. **ME Grown.**

120A Canadian Strawberry, $30.25

Chestnut Early Fall. MN 240 (Malinda x open-pollinated) U Minn, 1946. A dessert crab with truly excellent fruit for fresh eating, pickles and sauce. Round 2" yellow and bronze-red apple with some russeting. Firm crisp juicy fine-grained very sweet yellowish flesh. For a growing number of people in central Maine, late September is Chestnut apple time. Always scores high at our Common Ground Country Fair taste tests. A lot of people love this apple. For a few, despite its crispness and depth of flavor, it is too sweet. Chestnut alone with no sugar makes a sweet and subtle sauce. Not a keeper, but can be stored for a month or two. Vigorous, somewhat weeping, medium-sized productive tree. Disease resistant. Also beautiful in bloom, mid-late season. Z3-6. **ME Grown.**

123A Chestnut, $30.25



ME Grown = grown in Maine at one of our small local nurseries

Apple Collections

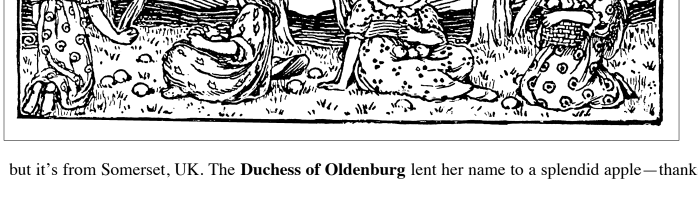
Collections may include varieties not listed in this catalog. Rootstocks will be **semi-dwarf and standard**. Trees are individually labeled within each bundle. Sorry, collections are not customizable.

Hard Cider Apple Collections **A bundle of 5, 10, or 25** trees to begin your cider orchard. Includes an assortment of bittersharp and bittersweet apples. Bundle of 5 will have 5 different varieties. Bundles of 10 and 25 will have at least 3 different bittersweet varieties. Please note that purchasing a bundle of 25 will give you an additional 15% discount if you order by the discount deadline. See order form, page 35, for details. **ME Grown.**

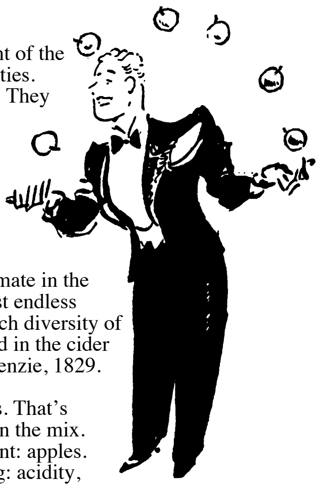
219A Hard Cider Apple Collection, bundle of 5, $140.00
219B Hard Cider Apple Collection, bundle of 10, $270.00
219C Hard Cider Apple Collection, bundle of 25, $650.00

Heritage Apple Collections **A bundle of 5 or 10** trees to begin your own heritage orchard. Each tree in the bundle will be a different heirloom traditionally grown in northern New England. **ME Grown.**

220A Heritage Apple Collection, bundle of 5, $140.00
220B Heritage Apple Collection, bundle of 10, $270.00



Cider Apples



Each year we offer a different assortment of the best European and American cider varieties. Many of these are NOT for fresh eating. They do however possess qualities that make them very desirable for ***fermented*** cider production. Please note the descriptions for details. We also offer crabapples suitable for cider. See the crabapple section on pages 44-45.

It's All in the Mix!

"From the great diversity of soil and climate in the United States of America, and the almost endless variety of its apples, it followed that much diversity of taste and flavor will be necessarily found in the cider that is made from them." – Colin MacKenzie, 1829.

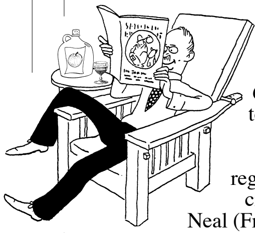
For the best cider, plant several varieties. That's because when it comes to cider, it's all in the mix. Unlike beer, cider has only one ingredient: apples. So the apples have to provide everything: acidity, sugar, tannin and flavor.

We classify the cider varieties into four categories: **sharp** (low in tannins, high in acid), **sweet** (high in sugar, little or no tannin, low acid), **bittersharp** (high in tannins and high acid) and **bittersweet** (high tannins and sugar, low acid). **Tannin** denotes naturally occurring compounds whose bitter astringency gives rounded full flavor, body and golden color. Is there a difference between **bitterness** and **astringency**? An excellent 2012 University of Reading (England) publication titled *Sustainable Cider Apple Production* attempts to define them: "Astringency is a drying, puckering sensation in the mouth in which the whole tongue is affected, while bitterness is mostly perceived at the sides and back of the tongue."

Vintage refers to varieties with the perfect qualities for cider.

We recommend you plant some sharp apples for acidity, some sweet apples for sugar and some bitter apples for the tannin. See the chart on p. 4 for suggestions. Our best cider has been from about 40% bittersweet (astringent) apples and 60% mixed dessert and cooking apples.

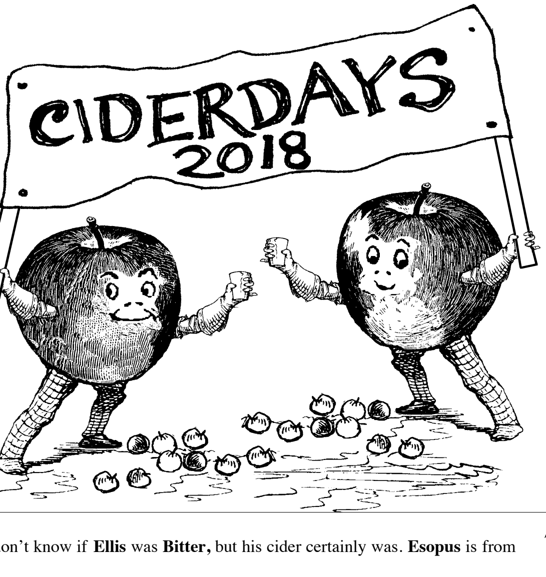
Cider Reading



Three good basic books are *Cider, Hard and Sweet: History, Traditions, and Making Your Own* by Ben Watson; *Cider: Making, Using and Enjoying Sweet and Hard Cider* by Annie Proulx and Lew Nichols; and *Apples to Cider: How to Make Cider at Home* by April White with Steve Wood. *The New Cidermaker's Handbook: A Comprehensive Guide for Craft Producers* by Claude Jolicoeur takes cidermaking to a more advanced level.

If you're considering a trip to the cider orchards of England or France, or just want to know more about regional ciders, try *Ciderland* by James Crowden (English cider) and *Calvados: The Spirit of Normandy* by Charles Neal (French cider). The best book on English cider varieties is *Cider Apples: The New Pomona* by Liz Copas. For French cider varieties, the best is *Pommiers à cidre: variétés de France* by JM Boré and J Fleckinger (in French only).

For the ultimate cider experience Join us at the 24th annual CiderDays festival in Franklin County, MA, on November 2–4, 2018. A weekend of workshops, panels, orchard tours, tastings, dinners and everything cider. If you are into apples and cider, it is just the thing for you. Join Fedco's John Bunker and cider enthusiasts and celebrities from all over the U.S. and Canada for an educational—and very fun—weekend.



Chisel Jersey Late Fall. Full bittersweet cider apple. Martock, Somerset, England, 19th c. One of the most famous of the Somerset bittersweets. Best blended with other apples, it makes a strong rich cider. Medium acidity, highly astringent, harsh and high in tannins. (SG 1.068, acidity 2.2g/L, tannin 4g/L) Round to slightly conic slightly greasy fruit, colored with a beautiful combination of dull opaque reds, yellows and russets. In old English *chesil* means 'pebble'—Chisel Jersey is small, hard and bitter! Spreading tree may require encouragement to develop a strong central leader. Consistent cropper. Closely related to Dabinett; they should not be relied upon to pollinate one another. One source recommends Harry Masters Jersey as a good companion for pollination, but as usual, most other apples should do the job. Late bloomer. Z4-7. **ME Grown.**

124A Chisel Jersey, $30.25
124C Chisel Jersey on M111, $30.25

Cora's Grand Greening Fall. Unknown parentage, probably originated on North Haven Island, ME, before 1850. Very large or even huge green blocky deeply ribbed high-quality all-purpose fruit often with a pinkish-red blush. Eat it fresh or cook it up. You might think you were growing gigantic bell peppers on a tree. It hardly looks like an apple. Brought to our attention by Becky Bartovics whose farm is defined by the old island tree that's been leaning downwind for more than 100 years. Not knowing if it had a proper name, Becky named it after Cora Ames who farmed the property as a single woman in the 19th c. One of those many ancient Maine-island varieties that only made it to the mainland in very recent years. Incredibly rugged, long-lived and scab free. Blooms early-midseason. Z4-6. **ME Grown.**

126A Cora's Grand Greening, $30.25

Cortland Fall-Winter. Ben Davis x McIntosh. NY Stn, 1915. Although never as important as McIntosh, Cortland remains very popular throughout northern New England even in this era of many new introductions. Medium-large slightly ribbed dull red fruit with a purple blush. Excellent eating and cooking. Slow-oxidizing white flesh is very good in salads; fine-grained, crisp, tender, juicy. Produces a surprisingly delightful cider, fresh or fermented, in a mix or even on its own. Vigorous tall upright spreading tree. Annual producer of heavy crops. A recent U Mass study showed Cortland's resistance to apple maggot fly. Bears young; remove fruit for the first year or two to avoid stunting growth. Susceptible to scab. Blooms midseason. Z4-6. **ME Grown.**

127A Cortland, $30.25
127C Cortland on M111, $30.25
127E Cortland on V1, $30.25

ME Grown = grown in Maine at one of our small local nurseries

Cox's Orange Pippin Fall. Possibly a seedling of Ribston Pippin. Near Slough, Bucks, England, around 1825. Deservedly one of the three or four most famous of all apples. Not only one of the best eating apples ever but also one of the most sought-after in modern apple breeding; parent or grandparent of many other varieties. Revered in the U.K. Medium-sized all-purpose aromatic fruit is red-orange to red with orange russet striping and wash. Perfectly balanced slightly subacid flavor and crisp juicy tender flesh improve with storage. Moderately vigorous moderately productive tree bears young and annually. Prefers cooler climates and higher pH (6.5–7.5+). The oldest Maine Cox's I know is about 40, thriving in Mercer, Zone 4. Scab resistant. Blooms midseason. Z4-7. **ME Grown.**

128A Cox's Orange Pippin, $30.25
128B Cox's Orange Pippin on B118, $30.25

Dabinett Late Fall. Medium-bittersweet cider apple. Probably a seedling of Chisel Jersey. Middle Lambrook, Somerset, England. (SG 1.057, acidity 1.8g/L, tannin 2.9g/L) One of the most popular cider varieties in Somerset today and one of the mainstays of Poverty Lane Cider Orchards. At a MOFGA workshop, Steve Wood of Poverty Lane and Farnum Hill Ciders said, "If you're going to plant one bittersweet, plant this one." Medium-sized roundish fruit covered with brownish brick-red stripes and blush. Sugar content fair and fermentation moderate. High-quality well-balanced low-acid cider with a soft-tasting tannin. Picked last week of October, usually blended with other late varieties. Crops annually. Grower-friendly tree with flat lateral branches may require help in developing a strong central leader. Not pollen compatible with Chisel Jersey. Midseason bloom. Z4-7. **ME Grown.**

129A Dabinett, $30.25
129C Dabinett on M111, $30.25

Duchess of Oldenburg Late Summer. Russia, well before 1800. Also called **Duchess** or simply **Dutch**. Imported in 1835 with the first wave of Russian apples and named in honor of Catherine Pavlovna, Grand Duchess of Oldenburg, sister of Czar Alexander. Duchess was planted extensively wherever growers needed extreme hardiness; it made growing apples possible in Aroostook County. Still quite popular in northern New England, it is the best of the best. Medium-sized round red-striped fruit. Firm fine-grained crisp tender juicy subacid aromatic flesh. If you live where it's cold and you're looking for one apple, try Duchess. Highly esteemed for all sorts of cooking; Duchess wins pie contests. It cooks up quickly into a creamy delicious sauce. Small to medium-sized adaptable tree. If you're into starting your own rootstock, try Duchess seedlings—they come relatively true to type. Scab resistant. Does not perform well in warmer districts. Blooms early-midseason. Z3-5. **ME Grown.**

132A Duchess of Oldenburg, $30.25

The Apple Family, Genus and Species

Along with ninety other genera (including stone fruits, cane fruits, strawberries, potentillas, quinces, spireas and roses) and many thousands of species, all apples and crabapples are members of the plant family *Rosaceae*, a.k.a. the rose family. Among other similarities, most *Rosaceae* plant species have flowers that resemble… roses!

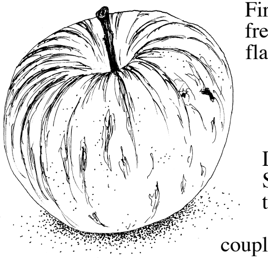
Although for a time apples were included with pears in the genus *Pyrus*, all apples and crabapples are now members of the genus *Malus*, a simple short two-syllable word with two pronunciations. The predominant and less correct pronunciation rhymes with "palace." Some folks pronounce *Malus* with a long "a" to rhyme with "pay-less." Well-respected plant writer Michael Dirr, who is usually if not always correct, says "may-less." The *Malus* genus is native to the Northern Hemisphere.

Sometimes we're asked about species of apples as though McIntosh and Black Oxford are different species. McIntosh, Black Oxford and Honeycrisp are varieties, not species. There are many thousands of varieties of apples. There are only about 25 to 41 species of apples, depending on whom you ask.

What is an apple species? A workable though not very scientific definition of an apple species is an apple that will come true to type when grown from seed. While this does not mean that all the trees and fruit will be identical, it does mean that they will all exhibit certain similar botanically identifiable characteristics. Each species developed in relative isolation over many thousands of years, generally untampered with by humans, propagating themselves all the while by seed and developing unique characteristics.

Why the discrepancy over the agreed upon number of species? Given the opportunity, apple species will readily cross with other apple species and create new hybrids. Some of these natural hybrids, or interspecific apple blends, have been around a long time. Generally, taxonomists call these "hybrid species." While some botanists would maintain that these are not true species, others believe they are. Another reason for the confusion is that some Asian species have been found only in cultivation and never in the wild. Because these apples have been grown for so long in isolation where they may have exhibited unique traits, they have been awarded species status even though they may be the results of human intervention.

So how many apple species are there? At the low end, John Fiala proposes 25 in his 1994 *Flowering Crabapples, the Genus Malus*. Barrie Juniper and David Mabberley list 41 in their 2006 *The Story of the Apple*. Currently, the source accepted by most taxonomists is the USDA Germplasm Resources Information Network (GRIN). Their list, found on the GRIN website, consists of 144 entries including species, hybrid species and synonyms. Of those, 40 appear to be unique species. In North America there are between four and nine *Malus* species, depending on whom you ask. In Europe, the number is about five, also depending on whom you ask. The other thirty-some species are native to Asia. While any number from 25 to 41 would be acceptable, if you want to pick a number of different apple species, just go with 40.



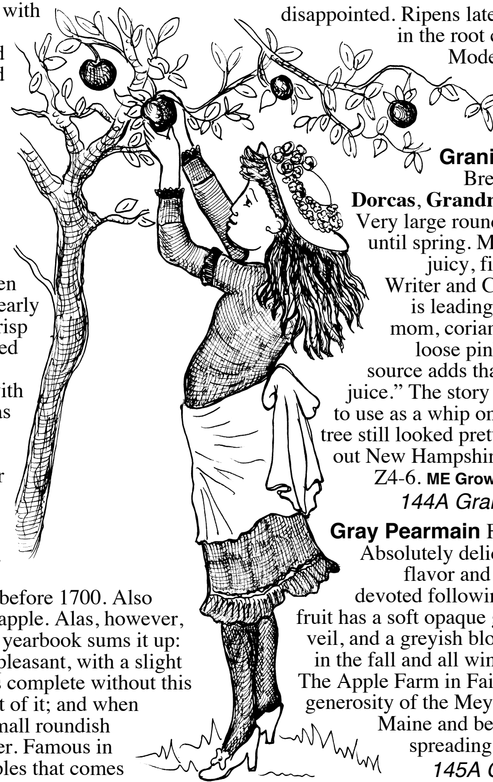
Dudley Winter Fall. Duchess x Hyslop crab. Castle Hill, ME, about 1877. Also called **Dudley** and **North Star**. Extremely hardy Duchess-type grown throughout northern New England and Canada for more than 100 years. Firm but tender, juicy aromatic subacid flesh for fresh eating and cooking. Medium-sized slightly flattened fruit is buttery yellow, overspread with red stripes and splashes. In appearance, less striped and more blushed than Duchess; in flavor, not quite as tart as Duchess; and, in northern areas—where it reaches its prime—Dudley will keep in the root cellar into winter. Selected by the John Wesley Dudley family in the late 1800s. A highlight of 2017 was giving a talk at the Mapleton Historical Society, a couple of miles from the original Dudley farm. Not only was it a fun evening, but it was an honor to have several Dudley descendants in the audience. Natural semi-dwarf. Blooms early-midseason. Z3-4. **ME Grown.**

133A Dudley Winter, $30.25

Ellis Bitter Early Fall. Medium bittersweet cider apple. Newton St Cyres, Devon, Somerset, England. Particularly useful for its early ripening, adding valuable bitterness to early-season cider pressings. (SG 1.033–1.053, acidity 2g/L, tannin 2.4g/L) Blend with other early dessert apples or cider varieties. Large oddly conic fruit—sometimes ribbed—mostly striped and blushed with red. White-fleshed, sweet, crisp and juicy. Soft, astringent, tannin. Still grown in England's West Country cider orchards and now being planted in the U.S. Fast-growing large upright rangy open vigorous tree produces regularly. Midseason bloomer. Z4-6. **ME Grown.**

134A Ellis Bitter, $30.25

134C Ellis Bitter on M111, $30.25



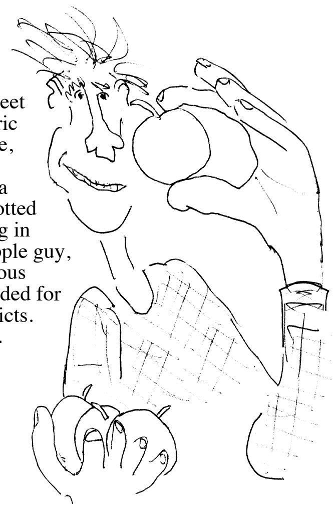
Esopus Spitzenburg Fall-Winter. Esopus, NY, before 1776. For more than 200 years "Spitz" has been a choice dessert and culinary variety, mentioned in nearly every list of best-flavored apples. Slightly subacid, crisp and juicy. Excellent acid source for sweet or fermented cider. Medium-large bright red round-conic fruit, covered with russet dots. Moderately vigorous tree with easily trained wide-angle branches. Forever famous as Thomas Jefferson's favorite apple though it vastly prefers New York and New England to Virginia. Moderately susceptible to scab though we have never sprayed ours with fungicides and the fruit has been great. Blooms mid-late season. Z4-7. **ME Grown.**

135A Esopus Spitzenburg, $30.25

135B Esopus Spitzenburg on B118, $30.25

Fameuse Early Fall. Unknown parentage. Canada, before 1700. Also called **Snow**. Excellent fresh eating, sauce and cider apple. Alas, however, not a pie apple. The 1865 Department of Agriculture yearbook sums it up: "Flesh remarkably white, tender, juicy…deliciously pleasant, with a slight perfume… No orchard in the north can be counted as complete without this variety… It is just so good that everybody likes to eat of it; and when cooked, it is white, puffy, and delicious." Medium-small roundish ruby-red thin-skinned fruit. Keeps until late December. Famous in Maine for well over 200 years. As one of the few apples that comes relatively true-to-type from seed, occasional "variations on a Fameuse theme" can be found in old orchards. Recent discoveries suggest that it could be one of the oldest varieties in North America. (For more details, you'll have to wait for John's new book, coming very soon.) Thought to be a parent of McIntosh. Productive long-lived tree. Susceptible to scab. Blooms mid-late. Z3-5. **ME Grown.**

137A Fameuse, $30.25



Gnarled Chapman Fall. Bittersweet cider apple. Unknown parentage. Eric Shatt intro, Hector, NY, 2015. Large, roundish-oblate and outrageously beautiful. Yellowy-green skin with a glowing orange blush, netted and dotted with russet. Eric named this seedling in honor of America's most famous apple guy, John "Appleseed" Chapman. Vigorous upright tip-bearing tree. Recommended for trial in all cider-apple growing districts. Blooms midseason. Z4-7. **ME Grown.**

141C Gnarled Chapman on M111, $30.25

Golden Russet Winter. Uncertain origin. Thought to be from England, New York or New England, before 1800. Round medium-sized russet fruit. Excellent eating; keeps all winter and well into spring. One of the best apples dried. The champagne of cider apples, ripening late in fall when the best sweet cider is ready to be made: sweet, balanced, thick and smooth. Also recommended as a sharp component for fermented cider. For more than 100 years, orchardists have been attempting to sort out the various russets. Several different apples have been called Golden Russet. Most resemble one another visually but differ in fruit qualities and tree habits. This is most likely the Golden Russet of Western New York. Vigorous diverging upcurving tree with long willowy branches. Scab resistant. Blooms early to midseason. Z4-6. **ME Grown.**

142A Golden Russet, $30.25

142C Golden Russet on M111, $30.25

GoldRush Winter. Coop 38 {PRI 2750-6=[Coop 17 (PRI 1689-100) x Golden Delicious]}. PRI Coop, 1994. The first of the new disease-resistant varieties from the Purdue-Rutgers-Illinois apple breeding program to have superior storage qualities. Not only that, it's probably the best-tasting apple to come out of that program. Medium-to-large round-conic fruit has uniform deep greenish-yellow opaque chewy skin that turns golden in storage. Creamy white green-flecked flesh is hard, very crisp, juicy and tart. Excellent flavor. Serve them for dessert in February and March and no one will be disappointed. Ripens late but successfully in central Maine. Keeps until May in the root cellar. Highly resistant to scab and powdery mildew. Moderate fireblight resistance. Blooms midseason to late. Z4-6. **ME Grown.**

143A GoldRush, $30.25

143B GoldRush on B118, $30.25

Granite Beauty Winter. Unknown parentage. Zephaniah Breed intro, Weare, NH, before 1850. Also called **Aunt Dorcas**, **Grandmother**, **Clothesyard Apple** and maybe a few more. Very large roundish-oblate red fruit ripens in late October and keeps until spring. Most years we still eat them in early May. Moderately juicy, firm but not crisp, slightly subacid, surprisingly good. Writer and Chelsea Green editor Ben Watson of New Hampshire is leading the effort to revive the variety and loves the "cardamom, coriander, warm spice" flavor. Cooks down quickly into a loose pink delicious sauce. The skins mostly dissolve. An old source adds that "it abounds in a rich, refreshing, and well flavored juice." The story goes that Dorcas Dow yanked up a young apple tree to use as a whip on a long horse ride. When she arrived home, the little tree still looked pretty good so she planted it. Once well known throughout New Hampshire and midcoast Maine. Probably blooms midseason. Z4-6. **ME Grown.**

144A Granite Beauty, $30.25

Gray Pearmain Fall-Winter. Probably Skowhegan, ME, before 1870. Absolutely delicious dessert (fresh eating) apple with a distinct pear flavor and firm white juicy mildly tart flesh. Steadily gaining a devoted following. Medium-sized slightly ribbed and muffin-shaped fruit has a soft opaque greenish-yellow skin with a rosy pink blush, a russet veil, and a greyish bloom. Produces excellent juice. Pick late and eat them in the fall and all winter. Until recently the only trees we knew of were at The Apple Farm in Fairfield, across the line from Skowhegan. Through the generosity of the Meyerhans, the Gray Pearmain is now grown throughout Maine and beyond. Annually bearing easy-to-grow medium-sized spreading tree. Blooms midseason. Z4-6. **ME Grown.**

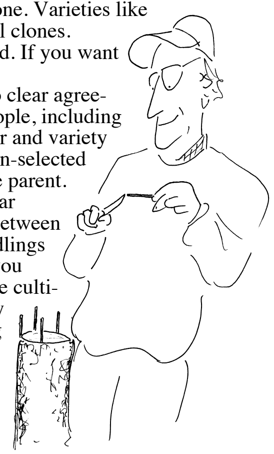
145A Gray Pearmain, $30.25

What is an apple variety and what is a cultivar?

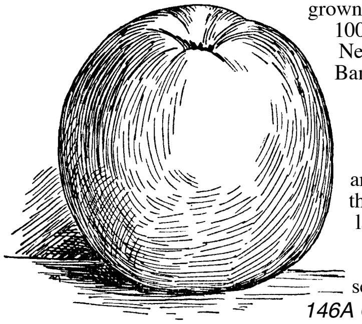
An apple variety is a human selection of an apple seedling, singled out because of the desirability of some characteristic or another. Although a few apples reproduce relatively true to type from seeds, in most cases the only way to replicate an apple you like is by asexual propagation, typically by grafting. Varieties are, therefore, a type of clone. Varieties like McIntosh, Honeycrisp or Black Oxford are all clones. They will not reproduce true to type from seed. If you want a Mac, you have to graft it.

What is a cultivar? There seems to be no clear agreement on the definition of this word. Some people, including Juniper and Mabberley, say the words cultivar and variety are synonyms. Fiala defines a cultivar as an un-selected individual of a group of seedlings of the same parent. By this definition, you might say that a cultivar would be an apple in the intermediary stage between species and variety: You have a group of seedlings or cultivars. From that group you select one you like for some reason or another. You name the cultivar 'Fedco Fantastic' and then propagate it by grafting, just like orchardists have been doing for 3000 years. At that point Fedco Fantastic departs from cultivar status and becomes a variety. It becomes a frozen snapshot in time.

For further confusion, see page 39.



Grimes Golden Fall. Unknown parentage. West Virginia, 1804. Tart citrusy crisp dense firm fruit is excellent for both dessert and cooking: wonderful spicy fresh eating, pies and applesauce. Medium-sized roundish fruit with opaque yellow skin scattered with grey russet dots and an occasional faint blush. All around excellent variety grown in old Maine orchards for more than 100 years. This is a perfect apple for the New England homestead north to about Bangor. An added bonus is that the fruit doesn't ripen all at once. In Central Maine they begin to drop in mid-October. We collect them off the ground and use them right up. Then around Halloween we pick the bulk of the crop to store in the root cellar until late winter. One of John Bunker's top five favorite apples. Productive precocious tree. Blooms mid-late season. Z4-6. **ME Grown.**



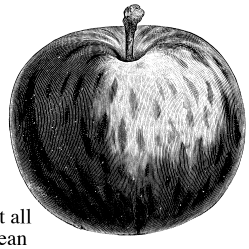
146A Grimes Golden, $30.25
146C Grimes Golden on M111, $30.25

Harrison Mid-Late Fall. Vintage cider apple. Unknown parentage. South Orange, Essex County, NJ, as early as 1712. One of the most renowned American cider apples, dating from the early days of domestic cidermaking. Harrison cider was famous and considered to be better than champagne. Medium-small oval yellow-skinned fruit. Rich firm dry yellow flesh. According to William Coxe in 1817, it makes a "high coloured, rich, and sweet cider of great strength, commanding a high price in New-York, frequently ten dollars and upwards per barrell." Vigorous productive tree. A Harrison revival is underway in several locations on the East Coast. Performing well in our central Maine trials. Appears to be plenty hardy. Z4-8. **ME Grown.**

147C Harrison on M111, $30.25

What species are the apples in the orchard?

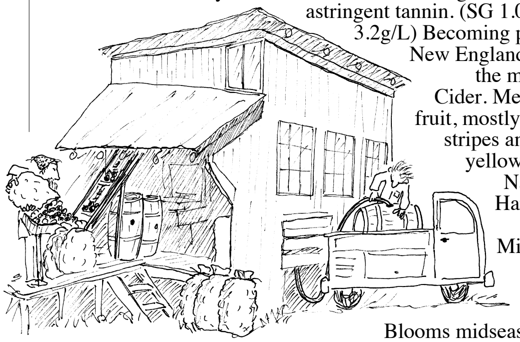
The apples we eat and cook and ferment have been known by a few different species names. Some taxonomists believe them to be a single species, while others believe them to be a blend. For many years, the apple was called *Pyrus malus*. More recently it's been called *Malus domestica* or *M.* x *domestica*. At times I've also heard it called *M. pumila*. Others have believed the orchard apple is entirely or almost entirely one species, *M. sieversii*, the wild apple from Kazakhstan.



In 2012, "using rapidly evolving genetic markers to make inferences about the recent evolutionary history of the domesticated apple," Amandine Cornille and a group of research scientists from six countries concluded the domesticated apple is in fact a blend of species. First off, they verified that the Kazakh *M. sieversii*—sometimes referred to as *M. pumila*—is the original "Central Asian progenitor." In other words, *M. sieversii* is where it all began. But they also determined that the European crab, *M. sylvestris*, played a large and defining role in the apple's evolution. "*Malus sylvestris* thus appears to have made a significant contribution to the *M. domestica* gene pool through recent introgression, building on the more ancient contribution of the Asian wild species *M. sieversii*." Not only that, but it also appears that at least two other species may play a small but notable part of the blend. "Some authors have also suggested possible contributions of additional wild species present along the Silk Route: *M. baccata*… which is native to Siberia, *M. orientalis*…a Caucasian species present along western sections of the ancient trade routes…"

We agree with this mish-mash-blended theory. As the apple traveled west along the Silk Road over the centuries, it mated with local species and spawned hybrid *Malus* seedling-children along the way. That would make the orchard apple a mix of apple species. According to an August 2017 *Nature Communications* article ("Genome re-sequencing reveals the history of apple and supports a two-stage model for fruit enlargement"), a group of 43 collaborators—a bit more than one per *Malus* species—using the most advanced genetic testing, came to the conclusion that "cultivated apples likely originate from *Malus sieversii* in Kazakhstan, followed by intensive introgressions from *M. sylvestris*. … Notably, the recent introgression from *M. sylvestris* into *M. domestica* has been so intensive that the cultivated apples now appear to be closer to European crabapple *M. sylvestris* than to their progenitor *M. sieversii*…" In other words, the orchard apple is a blend of multiple species, especially the wild apple from Kazakhstan and the wild European crab. *Malus domestica*, or *M.* x *domestica*, is the name we should be using.

Harry Masters Jersey Fall. Medium-full bittersweet cider apple. Often called **Port Wine** in north Somerset. Probably introduced by Harry Masters, Yarlington Mill, Woolston, Somerset, England, before 1900. High-quality bittersweet variety recommended for blending with other fall varieties. Soft astringent tannin. (SG 1.056, acidity 2g/L, tannin 3.2g/L) Becoming popular commercially in New England in recent years. One of the mainstays of Farnum Hill Cider. Medium-large oblate-conic fruit, mostly covered with bright red stripes and blush, and a splash of yellow russet around the stem. Narrow upright tree form. Harry Masters himself was the miller at Yarlington Mill. Harry Masters Jersey and Yarlington Mill are thought to be of the same parentage. Blooms midseason. Z4-7. **ME Grown.**



148A Harry Masters Jersey, $30.25
148C Harry Masters Jersey on M111, $30.25

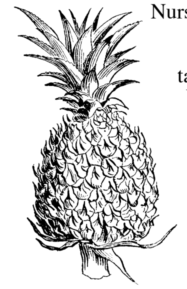
Honeycrisp Winter. MN 1711 (Keepsake x open-pollinated) U Minn, 1991. Medium-large fruit, mottled and striped red over yellow. Sweet and juicy with hard snapping-crisp texture. Top quality in September. Improves steadily in storage. Unusual because it ripens in early fall yet keeps up to 7 months in the root cellar. First of the many excellent University of Minnesota introductions to receive large-scale commercial attention, now has a huge following. Our best-selling apple. Probably best planted north of Massachusetts; less suited to warmer districts. Tends towards annual bearing. Relatively small low-vigor upright spreading tree. Above-average scab resistance. Blooms mid-late season. Z3-5. **ME Grown.**

149A Honeycrisp, $30.25
149B Honeycrisp on B118, $30.25
149C Honeycrisp on M111, $30.25
149E Honeycrisp on V1, $30.25

Keepsake Winter. MN 1593. (MN 447 [Frostbite] x Northern Spy). U Minn, 1979. One of the best of all winter storage varieties. Fine-textured flesh is hard, crisp, juicy and sweet. Excellent aromatic flavor, but wait about a month after picking before eating. Well named—keeps until July in the root cellar. Irregular conic medium-sized fruit is almost entirely overlaid with stripes and a wash of very deep red. Same parentage as Sweet Sixteen. Resembles Frostbite and Sweet Sixteen in appearance and taste, although the flavor is not quite as intense. Fruit size can be somewhat small. Don't be afraid to thin the crop each year 3 or 4 weeks after petal fall. You'll be happy you did. Moderately vigorous medium-sized tree reaches its prime in northern New England and the Upper Midwest. Somewhat resistant to scab. Blooms late. Z3-6. **ME Grown.**

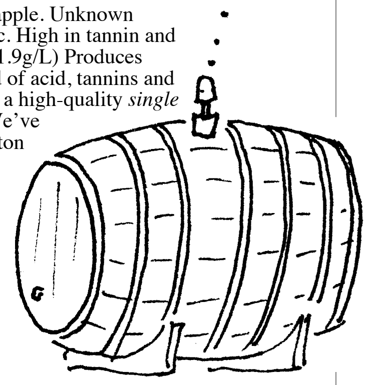
155A Keepsake, $30.25

ME Grown = grown in Maine at one of our small local nurseries



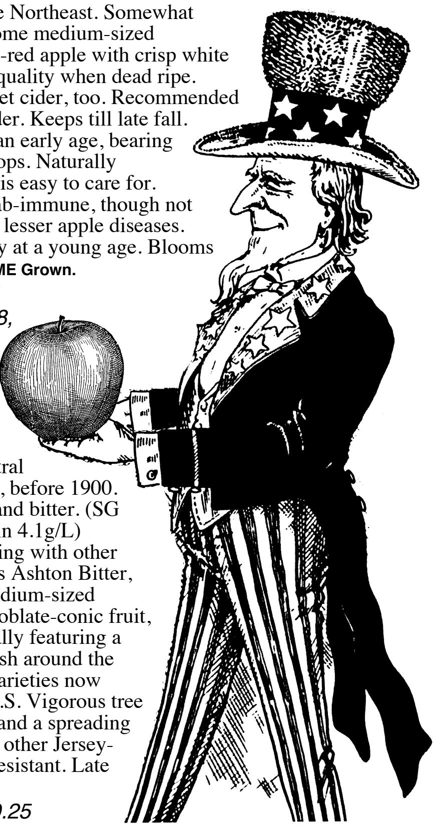
King David Fall-Winter. Chance seedling, thought to be Jonathan x Arkansas Black, Washington County, Arkansas, 1893. Stark Brothers Nursery intro, 1904. King David has a reputation as an intensely flavored apple. It may be the most flavorful apple I've ever eaten. The initial bite is an explosion of flavors—pineapple, tangerine, lemon, sweet, sour, tart, sharp, aromatic and spicy. You may wince or moan or scream. You may see stars. Fine juicy flesh is firm yet tender and distinctly yellow. Medium-sized round-oblate-conic fruit is very dark solid maroon—nearly black. Occasionally found in old Maine orchards. The tree is vigorous, bearing young and regularly. Ripens in fall and keeps until the beginning of the year. Its one drawback is scab susceptibility. We grow it anyway. Blooms early midseason. Z4-8. **ME Grown.**

156A King David, $30.25



Kingston Black Fall. Bittersharp cider apple. Unknown parentage. Somerset, England, early 19th c. High in tannin and acidity. (SG 1.061, acidity 5.8g/L, tannin 1.9g/L) Produces full-bodied vintage cider with a nice blend of acid, tannins and sugar. One of the few varieties that makes a high-quality *single variety* hard cider, also good in a blend. We've become fans of Farnum Hill's tasty Kingston Black varietal. Now we make it ourselves. Also makes superb fresh cider. Even the fresh juice is a deep rich dark color. Medium-sized conical beautiful rich red fruit is mottled with red russet and deeper shades of maroon. Fairly decent fresh eating. The tree is a reliable bearer, but is gangly and needs careful pruning. Blooms midseason. Z4-6. **ME Grown.**

158A Kingston Black, $30.25
158C Kingston Black on M111, $30.25



Liberty Late Summer-Fall. NY 55140-19 [Macoun x PRI 54-12 (PRI Co-op complex cross includes Rome Beauty, Jersey Black, McIntosh, Wealthy and *M. floribunda*)] NY Stn, 1978. One of the best of the disease-resistant varieties, particularly in the Northeast. Somewhat similar to Macoun. Handsome medium-sized round-conic bluish-pinkish-red apple with crisp white flesh of very good dessert quality when dead ripe. Excellent cooking and sweet cider, too. Recommended for single-variety sweet cider. Keeps till late fall. Begins fruit production at an early age, bearing consistent heavy annual crops. Naturally well-structured sturdy tree is easy to care for. Considered to be 100% scab-immune, though not resistant to insects or other lesser apple diseases. Don't let it crop too heavily at a young age. Blooms early to midseason. Z4-6. **ME Grown.**

159A Liberty, $30.25
159B Liberty on B118, $30.25
159E Liberty on V1, $30.25

Major Early Fall. Full bittersweet cider apple. Probably originated in central Somerset County, England, before 1900. Sweet, soft, woolly, juicy and bitter. (SG 1.054, acidity 1.8g/L, tannin 4.1g/L) Recommended for combining with other early cider varieties such as Ashton Bitter, Ellis Bitter and Nehou. Medium-sized pinkish-rosy-red roundish-oblate-conic fruit, sometimes ribbed and usually featuring a small yellowish russet splash around the stem. One of the English varieties now becoming popular in the U.S. Vigorous tree with a good central leader and a spreading branching habit. Similar to other Jersey-type cider varieties. Scab resistant. Late blooming. Z4-6. **ME Grown.**

161A Major, $30.25

Hardiness zone ranges

At the end of each apple description is a zone range. Z3-5 means this particular apple will do best in the USDA hardiness Zones 3, 4 and 5. It might do fine in Zone 2 or 6, but it should be at its peak in Zones 3-5.

Ripening dates vary depending on location and on the conditions of a particular year. We hope to give you a good sense of when a variety will ripen, but please bear in mind that it might be different out your way.

McIntosh Fall. Possibly a seedling of Fameuse or St. Lawrence. Dundela, Ontario, 1811. The most important apple in the Northeast. It grows to perfection in our cool climate. There are many strains of McIntosh, some striped, some blushed, some solid red. Recent strains have been selected for traits other than flavor, and the variety has gotten a bad reputation. This strain has green ground color overlaid with red stripes and blush. It was planted in 1906 in Mercer, ME. It has the best "Mac" taste. A delicious aromatic apple. Annual cropper. Large beautifully rounded spreading strong easily managed tree. Very susceptible to scab. Blooms midseason. Z4-5. **ME Grown.**

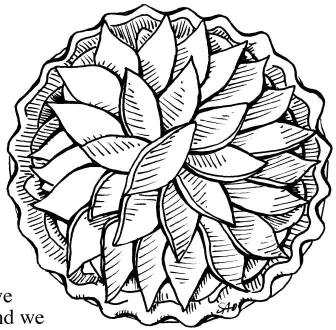
163A McIntosh, $30.25
163C McIntosh on M111, $30.25
163E McIntosh on V1, $30.25

Medaille d'Or Late Fall. Full bittersweet cider apple. Unknown parentage. Developed by a Mr. Goddard of Boisguillaume, Rouen, France, probably mid-19th c. The gold medal of cider apples, introduced into England in 1884. Full bittersweet, high in bitterness and astringency. (SG 1.053–1.059, acidity 27%, tannin 64%) Combine with other late varieties. Small-to-medium roundish-conic yellow fruit mostly covered with a netting of golden russet and sometimes featuring a soft reddish blush. Wide spreading vigorous tree with good branch angles. Scab resistant but said to be susceptible to fireblight. Blooms late season. Z4-7. **ME Grown.**

164A Medaille d'Or, $30.25

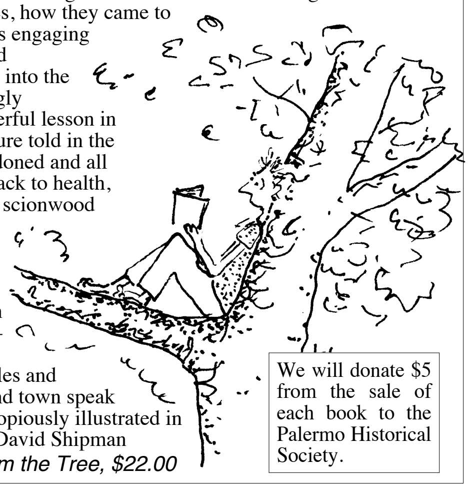
Milden Fall-Winter. Alton, NH, before 1813. Also called **Milding** and **Winter Gravenstein**. All-purpose Baldwin-type winter variety popularized long ago for growing where Baldwin lacked hardiness. Large oblate-to-conic fruit mottled and splashed with bright red. Good for fresh eating and cooking. The fine-textured whitish flesh, tinged with yellow, is coarse, quite juicy, sparkly, crisp and melting. Medium hard with a snap. Very pleasing. Famous for winter pies. Once fairly common in northern New England and still found in old Maine orchards. Some years ago I received a wonderful letter from 101-year-old Eva Burgess of Sangerville, who wrote, "I practically grew up in an apple orchard. My grandfather, Henry Leland, was an orchardist in Piscataquis County…His main apple was Milding." Ripens late and keeps until spring. Large vigorous tree. Blooms midseason. Z3-5. **ME Grown.**

165A Milden, $30.25



New Brunswicker Late Summer. Thought to be a Duchess seedling. Francis Peabody Sharp intro, Upper Woodstock, NB, Canada, about 1855. An excellent all-purpose extremely hardy variety for pies and sauce and everything else. Highly recommended for the northern grower. This is among the best. Medium-sized roundish fruit, red blushed and striped with a lot of light yellow ground color showing through. Sometimes confused with Duchess as the two are similar. We have both New Brunswicker and Duchess and we love them both. In our orchard New Brunswicker ripens a week later. For the chef in the north, it's hard to do better. Selected by the great plant breeder and nurseryman Francis Peabody Sharp (1823-1903), who long ago operated huge nurseries in Houlton, ME, and across the border in New Brunswick. Does not perform well south of about the NH-Mass line. No scab. Blooms early season. Z3-6. **ME Grown.**

167C New Brunswicker on M111, $30.25

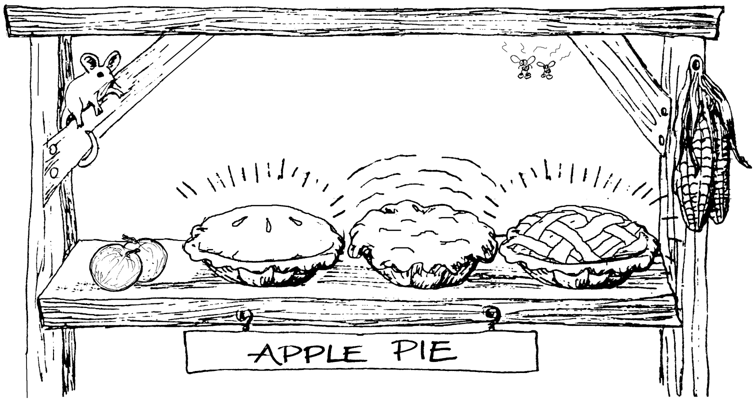


Not Far from the Tree: A Brief History of the Apples and the Orchards of Palermo, Maine, 1804-2004 by John Bunker, 200 pages, 8½ x 11, softcover. John reveals how he came to know so much about apples—he spent years talking to his neighbors in Palermo, listening to their stories and walking their fields and orchards learning the varieties, how they came to be planted there and why. His engaging narrative and entertaining and informative drawings take us into the rich diverse past of a seemingly unremarkable town. A wonderful lesson in the history of Maine agriculture told in the apple trees. Many long abandoned and all but forgotten, some nursed back to health, and some finding new life as scionwood that begets generations of apple trees from Fedco. John is a colleague and a friend and I confess that I am not a disinterested reviewer. I even have a tiny part in his story—I taught him how to make an apple pie. John's love of apples and affection for his neighbors and town speak clearly through each page. Copiously illustrated in John's unmistakable style. –David Shipman

L627A Not Far from the Tree, $22.00

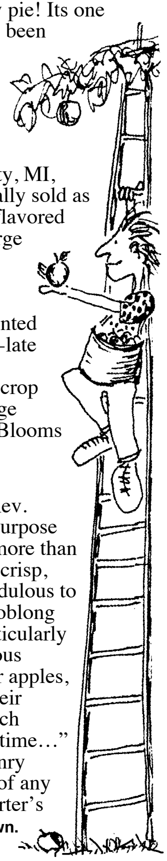
We will donate $5 from the sale of each book to the Palermo Historical Society.

cider is a big deal. **McIntosh** may sound like the computer, but it's a far superior apple product. **Medaille d'Or** will win you a gold medal—or not. No mild winters where **Milden** grows best.



Northern Spy Winter. Chance seedling. East Bloomfield, NY, about 1800. One of the most famous of all heirloom apples. Very large delectable all-purpose fruit, covered with pink and light red stripes. Very juicy and tender. Even when the thin skin bruises, the fruit keeps extremely well. Cooks up quickly into a loose mild sauce. No need to remove the skins. Its reputation as a pie apple is well deserved: makes a very good single-variety pie! Its one drawback is being slow to come into bearing, although for us it's been worth the wait. Medium-to-large moderately vigorous long-lived tree. Good scab resistance. Leafs out late and blooms late season. Z4-6. **ME Grown.**

169A Northern Spy, $30.25
169C Northern Spy on M111, $30.25



Opalescent Fall. George M. Hudson intro, Shultz, Barry County, MI, 1890s. Originally called Hudson's Pride of Michigan but eventually sold as Opalescent by Dayton Star Nurseries, Xenia, OH, 1899. Highly flavored dessert apple, famous among aficionados. Biting into the very large brilliant deep red white-dotted fruit will zap your tongue with flavor. Crisp, sweet, tart, juicy—but most of all supremely flavorful. Also considered a good cooking apple. Would be an excellent apple for the farmstand or CSA. Better than all the patented designer-named grocery store apples put together. Keeps till mid-late winter. Likely at its best from Massachusetts north. The ancient broken-down tree up the road from here still pumps out a decent crop most years. Now we have it on our farm and in the Maine Heritage Orchard (see page 14). Vigorous medium-sized productive tree. Blooms midseason. Z4-6. **ME Grown.**

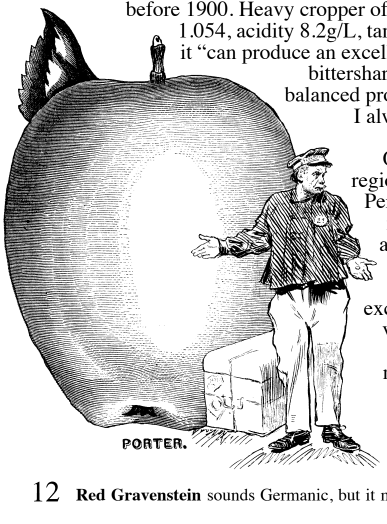
170A Opalescent, $30.25

Porter Late Summer-Early Fall. Originated on the farm of the Rev. Samuel Porter, Sherburne, MA, about 1800. One of the true all-purpose heirloom apples, popular throughout much of New England for more than a century. The 1922 *Cyclopedia of Hardy Fruits* calls the apple "crisp, tender, juicy, perfumed flesh, richly flavored and sufficiently acidulous to make it one of the most refreshing of all apples." Medium-large oblong barrel-shaped conical yellow fruit with a faint reddish blush. Particularly good dessert apple. In 1896, Fanny Farmer described in her famous cookbook how to can them: "Wipe, quarter, core, and pare Porter apples, then weigh. Make a syrup by boiling for ten minutes one-third their weight in sugar with water, allowing two and one-half cups to each pound of sugar. Cook apples in syrup until soft, doing a few at a time…" 19th c. social reformer, clergyman and renowned abolitionist Henry Ward Beecher once famously declared, "Who would make jelly of any other apple, that had the Porter?" Our scionwood comes from Porter's hometown of Sherburne, MA. Blooms late season. Z4-7. **ME Grown.**

174A Porter, $30.25

Porter's Perfection Late Fall. Medium bittersharp cider apple. Charles Porter intro, East Lambrook, near Kingsbury Episcopi, Somerset, England, before 1900. Heavy cropper of small dark red-blushed fruit. (SG 1.054, acidity 8.2g/L, tannin 2.5g/L) Liz Copas writes that it "can produce an excellent cider. Its juice is rather acidic bittersharp and is better blended for a more balanced product." When I meet cidermakers, I always ask them about their favorite varieties. Eric Shatt of Redbyrd Orchard Cider in the Finger Lakes region of New York replied, "Porter's Perfection." Redbyrd's website calls it an "excellent balance of tannins and acidity." Often produces twins or triplets—two or more fruits fused together. Similar to the excellent Lambrook Pippin; the two varieties are thought to be of same parentage. Scab resistant. Blooms midseason. Z4-7. **ME Grown.**

175C Porter's Perfection on M111, $30.25



Where can I taste that apple?

While we pride ourselves on our variety descriptions, there's nothing like the real thing. No words can compare to the taste. Frequently we're asked, "Where can I taste a…?" One opportunity is **Great Maine Apple Day**, Sunday, October 14, 2018, at MOFGA in Unity.

Visit an orchard near you. There are many great orchards out there. If you know of any we should list, please let us know. Even one or two rare finds can be worth the trip. Below are some orchards with good collections. There are others, too. Don't be frustrated if you call and reach no one. Just go. By September most of them are open 6 or 7 days a week.

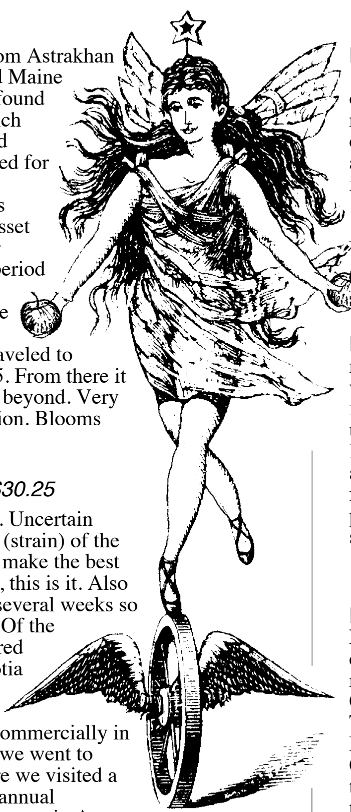
Maine:

Contact the Maine Dept of Agriculture at (207) 287-3491 or online at getrealmaine.com for a complete list of the orchards in Maine. Many have unusual varieties of apples and other tree fruits.

- The Apple Farm, Fairfield, Somerset County (207) 453-7656, applefarm.us. A great collection of unusual old and new varieties.
- Bailey's Orchard, Whitefield, Lincoln County (207) 549-7680. One of the largest collections of old varieties in the state. Other fruits, too.
- Cayford Orchards, Skowhegan, Somerset County (207) 474-5200, cayfordorchards.com. 57 new and heirloom varieties of tree fruits.
- Clayfield Farm, East Blue Hill, Hancock County (207) 374-2159, clayfieldfarm.net. Small organic orchard of mixed varieties.
- Doles Orchard, Limington, York County (207) 793-4409, dolesorchard.com. Mix of old and new. They have two un-named varieties crossed by the late Maine plant breeder Russell Bailey. Both are extremely rare, if not unique.
- Lane Road Orchard, New Sharon, Franklin County (207) 272-7684. Many interesting heirlooms and unusual mordern varieties.
- Maine-ly Apples, Dixmont, Penobscot County (207) 234-2043, mainelyapples.com. Excellent collection of old, new and rare varieties.
- Out on a Limb Apple CSA, multiple pickup locations. outonalimbapples.com. Co-managed by Fedco's own John Bunker. Members receive biweekly shares of rare apples and get to try more than 20 varieties. Must sign up in advance.
- Ricker Hill Orchards, Turner, Androscoggin County (207) 225-5552, rickerhill.com. Organic apples and more, mostly modern varieties.
- Rollins Orchard, Garland, Penobscot County (207) 924-3504, rollinsorchards.com. More than 20 unusual old varieties.
- Sewall Orchard, Lincolnville, Waldo County (207) 763-3956, sewallorchard.com. Organic apples including some of the first disease-resistant releases.
- Sweetser's Apple Barrel and Orchards, Cumberland Center, Cumberland County (207) 829-6599, maineapple.com. A great collection of 39 old and new varieties. Don't miss their Rolfe apples.

Other northeastern states:

- Bear Swamp Orchard, Ashfield, MA (413) 625-2849, bearswamporchard.com. Organic U-pick apples and hard cider.
- Nashoba Valley Winery, Bolton, MA (978) 779-5521, nashobawinery.com. A very large collection of old and new varieties.
- Old Sturbridge Village, Sturbridge, MA (508) 347-0290, osv.org. Rare heirloom apple tree collection.
- Tower Hill Botanic Garden, Boylston, MA (508) 869-6111, towerhillbg.org. The best collection of historic varieties in southern New England. A great place to study the fruit. Usually for sale at a special event on Columbus Day weekend. Call ahead.
- Alyson's Orchard, Walpole, NH (603) 756-9800, alysonsorchard.com. Large collection of new and old varieties.
- Gould Hill Orchard, Contoocook, NH (603) 746-3811, gouldhillfarm.com. Large collection of new and old varieties.
- Lost Nation Orchard, Groveton, NH, michael@herbsandapples.com. Many unusual varieties.
- Poverty Lane Orchards, Lebanon, NH (603) 448-1511, povertylaneorchards.com. One of the best collections of unusual dessert apples in New England. One of the largest collections of cider apples in the U.S. They have most of the cider varieties we sell.
- LynOaken Farms, Lyndonville, NY (585) 798-1060, lynoakenfarms.com. 350 varieties new and old.
- Connecticut Valley Orchard, Westminster, VT (802) 722-3340. Large selection of new and old varieties.
- Scott Farm Orchard, Dummerston, VT (802) 254-6868, scottfarmvermont.com. More than 120 heirloom and unusual varieties.
- Windfall Orchard, Cornwall, VT (802) 462-3158, windfallorchardvt.com. More than 80 varieties of fruit: apples, pears, plums, cherries and quince.



Red Astrachan Summer. Thought to be from Astrakhan on the Black Sea, prior to 1800. The standard Maine summer cooking apple for generations. Still found occasionally in old Maine dooryards. Juicy rich subacid white flesh frequently tinged with red makes a highly colored sauce. Especially loved for its distinctive flavor in pies. Medium-sized somewhat oblate fruit, splashed or sometimes solidly covered with dark red. An obvious russet patch surrounds the stem. Looks like a junior version of a Wolf River. Fruit ripens over a period of several weeks in midsummer, making it perfect for the home orchard and lousy for the commercial folks who want them all at once. After finding its way to Sweden, the apple traveled to England and finally to Massachusetts in 1835. From there it quickly spread throughout New England and beyond. Very hardy. Keeps for a few weeks with refrigeration. Blooms early. Z3-6. **ME Grown.**

178A Red Astrachan, $30.25
178C Red Astrachan on M111, $30.25

Red Gravenstein Late Summer-Early Fall. Uncertain European origin, 17th c. or earlier. Red sport (strain) of the most famous of all pie apples. If you want to make the best pies and you live south of about Bangor, ME, this is it. Also excellent for dessert and sauce. Ripens over several weeks so you don't have to deal with them all at once. Of the many Gravenstein strains, this one is purple-red and probably originated in western Nova Scotia in about 1900. Trees can occasionally be found in old orchards in southern and coastal Maine. Gravensteins are still grown commercially in Nova Scotia and on the West Coast. In 2017 we went to Sonoma County north of San Francisco where we visited a wonderful orchard of ancient trees. Visit the annual Gravenstein Apple Fair if you're ever out that way in August. Large vigorous perfectly shaped tree. Easy to prune. Triploid, will not pollinate other varieties. Blooms early. Z4-8. **ME Grown.**

179A Red Gravenstein, $30.25

Redfield Fall. Wolf River x Niedzwetzkyana. NY Stn, 1938. One of the best and largest of the red-fleshed apples. Although usually considered way too tart for eating out of hand, the medium-large fruit with opaque solid rusty-red skin is absolutely great in pies, makes wonderful jelly and turns sauce and cider red. We love this apple. Gained fame in the hard-cider world thanks to the wonderful single-variety Redfield cider and Redfield blends made by the late Terry Maloney of West County Cider. Very sharp and bitter in cidermakers' lingo. (SG 1.052) Flesh is two-toned: deep pink fading to white around the core. The flowers are also two-toned, deep pink, tipped with small white lightning bolts. And the bronze-red foliage adds further interest all season. Bears young, annually, and shows some insect resistance in our trials. One of the very first to bloom each year. Z3-6. **ME Grown.**

180A Redfield, $30.25

Rhode Island Greening Fall-Winter. Green's Inn, near Newport, RI, about 1650. Also known as **Greening**. The classic New England cooking apple. Large roundish-conic-oblate green fruit often has a tannish blush. Light yellow-green flesh is crisp and tart. Great for pies, also excellent for fresh eating. The number one *green* apple for a few centuries before Granny Smith arrived from Down Under and stole the show. The most well-known of the various Greenings. Because of its high-quality fruit and adaptability to a range of soil conditions, Rhode Island Greening established itself as one of the most important commercial varieties throughout the Northeast in the 19th c. Keeps well into winter. About as hardy as Baldwin. Old trees can still be found in central Maine. Not recommended for northernmost districts, but cooks everywhere else will love it. Blooms late season. Z4-7. **ME Grown.**

182A Rhode Island Greening, $30.25

Ribston Pippin Fall-Winter. Ribston Hall, Yorkshire, England, about 1700. Famous as an exceptional dessert apple. Medium-large roundish-oblate fruit is covered with an incredibly beautiful swirl of reds, oranges and russets. One of the best for fresh eating from late fall to early January. Sharp, crisp, rich and aromatic. Dried, it has an intense rich flavor. Recommended as an acid source for cider. Sometimes you find watercore in the fruit, an indication of elevated sugar content. Likely the parent of the renowned Cox's Orange Pippin. One of the first English varieties to thrive here in America, probably brought over by Benjamin Vaughan just before the Revolution. Vaughan grew it on his farm in Hallowell, ME. *The Maine Farmer* reported in 1854 that Ribston "does better in Maine than any where in the U.S." Blooms midseason. Z4-7. **ME Grown.**

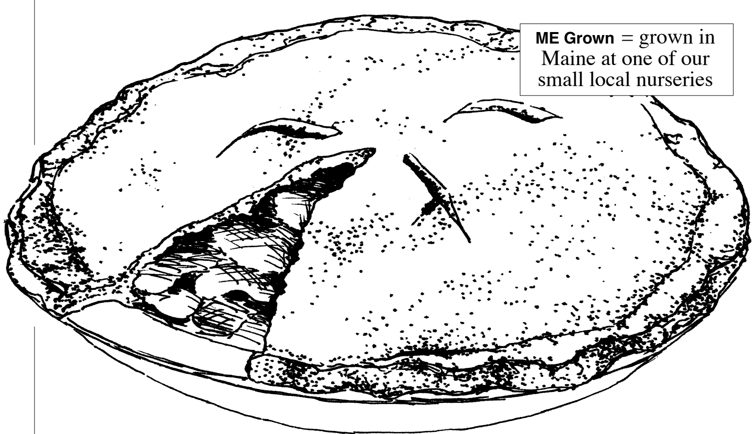
183A Ribston Pippin, $30.25

Roxbury Russet Winter. Roxbury, MA, early 1600s. Said to be the first named American apple variety. One of the best late-winter dessert apples—it would be hard to live without a stash of them in our root cellar. Our favorite for winter sauce. Hard medium-large patchy green and russeted fruit not uniform in size, shape or color. Rich, spicy and juicy. Exceptional sauce. Dried, it's nice and tart with a pleasant first sensation and a lingering good aftertaste. The aromatic juice is recommended by some for cider, fresh or fermented. Medium-to-large vigorous spreading tree. One of the most popular commercial apples of the 19th c., largely because it can store until summer. Scab resistant. Blooms midseason. Z4-6. **ME Grown.**

185A Roxbury Russet, $30.25
185B Roxbury Russet on B118, $30.25

Rubicon Winter. Paw Paw, Van Buren County, MI, 1858. Also known as **Paw Paw**. Firm fine-textured tender juicy subacid all-purpose fruit for fresh eating. Also makes an excellent pie. Medium-large roundish-oblong rusty red striped fruit. We learned about Rubicon from Liz Lauer of Penobscot County, north of Bangor. Liz received her grafting scionwood from Belinda Toby of nearby Lakeville. Belinda told me that her relatives moved to Michigan generations ago and sent scions back to her great grandfather, Charles Boyce, who most likely grafted the family's ancient tree. According to Belinda, it's a "wonderful keeping apple…it freezes well…the goats even tried to kill it…it's just a fine apple." The family sent scions years ago to Sturbridge Village in Massachusetts where it was added to their heirloom collection. Extremely hardy. Probably blooms midseason. Z3-5. **ME Grown.**

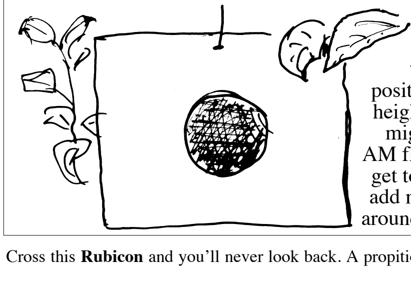
186C Rubicon on M111, $30.25



ME Grown = grown in Maine at one of our small local nurseries

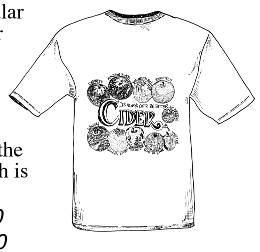
Apple Maggot and plywood

The late Don Johnson made nifty apple maggot traps. We've gotten into doing so ourselves. In small orchards, the traps alone may be enough to reduce the AM pressure to a tolerable level. Here's how: Cut up plywood (3/8" or 1/2") into 8x11" rectangles. Drill a hole along the top edge. Paint the plywood bright yellow with a 2–3" red spot (the apple) in the center. Coat with Stiky Stuff (an adhesive available at Fedco's Organic Growers Supply) and hang three in each tree in mid-June, positioning the traps at about chest height. Trim away any foliage that might stick to the trap. Check for AM flies. Now and then, when they get too gooky, scrape the traps and add new Stiky Stuff. Remove traps around Labor Day.



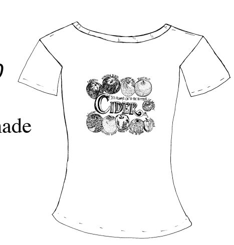
Fedco Cider T-shirts: "It's Always OK to Be Bitter"

Celebrate your favorite fall drink with our popular cider T-shirt, featuring John Bunker's full-color paintings of ten of the most famous English, French and American cider apples. Printed at Maine's own Liberty Graphics.



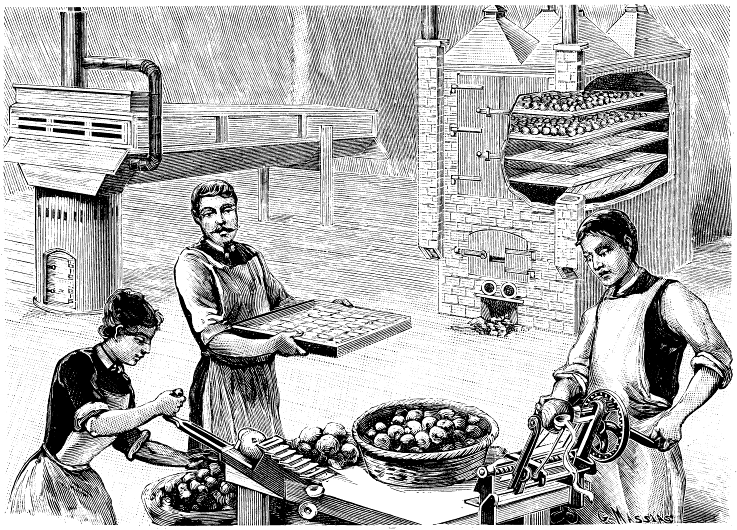
Crewneck T-shirts These are your standard relaxed-fit tees. 100% organic cotton grown in the U.S. Natural off-white color, except 3XL, which is white.

L625A Crewneck natural T-shirt, S, $22.50
L625B Crewneck natural T-shirt, M, $22.50
L625C Crewneck natural T-shirt, L, $22.50
L625D Crewneck natural T-shirt, XL, $22.50
L625E Crewneck natural T-shirt, 2XL, $22.50
L625F Crewneck white T-shirt, 3XL, $22.50



Fitted T-shirts Trim fit style with scoop neck, made from soft light grey 100% cotton.

L626A Fitted scoopneck T-shirt, S, $22.50
L626B Fitted scoopneck T-shirt, M, $22.50
L626C Fitted scoopneck T-shirt, L, $22.50
L626D Fitted scoopneck T-shirt, XL, $22.50



Spice Sweet Late Summer. Massachusetts, early 1800s. One of the best of all pie apples. Well named. The orangey-colored cooked fruit is packed with spiced flavor! Rather low in acid, unusual for a pie apple. Most sweet apples are terrible in pies, but Spice Sweet is exceptional. Very good fresh eating as well. Medium-size lumpy red fruit resembles Northern Spy. Laura Childs rediscovered it in 2011 in Belgrade, ME, on the old Bickford Farm. The Bickford grandparents always called it Old Spice. There are historical records of multiple apples with the name Spice Sweet or Spice Sweeting. This one is likely the Spice Sweeting described by Dr. John Warder in 1867. Blooms midseason. Z4-7. **ME Grown.**

190A Spice Sweet, $30.25

Starkey Fall-Winter. Seedling of Ribston Pippin. Moses Starkey intro, Vassalboro, ME, about 1800. Exceptionally delicious late fall to early winter dessert apple. In the same league as its parent Ribston Pippin and its probable half-sibling Cox's Orange Pippin. Medium-sized roundish-oblate fruit is almost entirely rosy red blushed and striped, then sprinkled with prominent white dots. Off-white flesh is juicy, tender, crisp, mild, lively and subacid. Rediscovered in 1998 on the farm of Sue and Walter Ernst in Vassalboro, ME, with the help of orchardist and life-long Starkey fan, the late Frank Getchell of Vassalboro. A second tree was later discovered in Vassalboro with the help of Bob Clark. In recent years we have also discovered trees farther afield in the Maine towns of Bowdoinham and Industry. Not to be confused with Stark. Blooms early midseason. Z4-7. **ME Grown.**

191A Starkey, $30.25

Sweet Sixteen Fall. MN 1630 (MN447 x Northern Spy) U Minn, 1979. The first bite into a Sweet Sixteen is always a surprise. Fine-textured crisp flesh contains an astounding unusually complex combination of sweet, nutty and spicy flavors with slight anise essence, sometimes described as cherry, vanilla or even bourbon. We always love Sweet Sixteen season. Truly excellent fresh eating, although it is too sweet for some palates. Also good for pies and sauce. Round-conic bronze-red medium-sized fruit, striped and washed with rose-red. Annual bearer if thinned. Very hardy moderate-sized vigorous vase-shaped tree grows upright with willowy branches that get loaded with fruit but do not break. Best grown in northern districts. Keeps till midwinter. Some resistance to scab. Blooms mid to late season. Z3-6. **ME Grown.**

193A Sweet Sixteen, $30.25

Tolman Sweet Fall-Early Winter. Sweet Greening x Old Russet. Dorchester, MA, before 1700. Sometimes called **Talman Sweet**, **Taulman Sweet**, **Tomey Sweet** and many variations. One of the first American apples and one of the few to remain popular for centuries. Truly an all-purpose fruit, used for cider, cooking, dessert and even animal fodder. Once popular for pickling, boiling and baking. Especially prized in Maine for apple cake. Unforgettably peculiar sweet strange flavor. Very low acidity. Moderately juicy medium-sized greenish fruit, sometimes with a bit of a blush and often marked by a suture line running from stem to stern. Long-lived heavy-bearing vigorous tree. Still often found throughout central and southern Maine. Blooms midseason. Z4-6. **ME Grown.**

194A Tolman Sweet, $30.25

Twenty Ounce Fall. Cayuga, NY, before 1845. Very large (1¼ pounds!) high-quality pie and general cooking apple. Sometimes mistakenly called Twenty Ounce Pippin. Huge roundish fruit is mostly red-and-orange striped and slightly greasy. Fills the October niche between the early season and the late season cooking apples. Tasty and perfectly textured in a pie. Your crust will never sink. Tart sauce cooks up medium-fast. Very good dried. Can be as big as a Wolf River and some orchards confuse the two, but they are quite different. Twenty Ounce never has a large russet splash around the stem. Wolf River is considerably more oblate (flattened) and pinker. We still find old Twenty Ounce trees here and there in central and northern Maine. Blooms early midseason. Z4-7. Maybe even Z3. **ME Grown.**

195A Twenty Ounce, $30.25

Wealthy Fall. Cherry crab seedling. Excelsior, MN, 1860. A Maine native of sorts, the seed having come from Bangor. Superb all-purpose fall apple, one of the most famous of all hardy varieties. With its perfect texture and complex flavors, Wealthy is considered to be one of *the* best apples. I agree. Round-oblate medium-sized fruit is pale greenish-yellow streaked with carmine. About as firm as McIntosh. Tender very juicy sweet subacid flesh is white, often stained red. Good eating and even better cooking. Wonderful pies! Good acid source for fermented cider. Ripens over a long period. Productive moderately vigorous long-lived naturally small-statured tree. Blooms early. Z3-5. **ME Grown.**

197A Wealthy, $30.25

Westfield Seek-No-Further Fall. Westfield, MA, mid-18th c. One of the most famous of all heirloom dessert apples. Still loved by anyone who knows it. A Hudson River grower of 200 varieties declared it "the best apple in the world." Medium-sized roundish-conic fruit is dull rusty red, yellow, conspicuously dotted and sometimes russeted. Highly flavored, rich, a little bit sweet, a little bit sour, firm, crisp and juicy. It has everything. *The Apples of New York* calls it "rich, sometimes astringent, peculiarly aromatic, sprightly, very good to best." Also an outstanding drying apple. Keeps until early winter. Hardier tree than Baldwin. Michael Clark of Knox, ME, provided scionwood. His ancient tree is a sight to behold. Blooms midseason. Z4-6. **ME Grown.**

198A Westfield Seek-No-Further, $30.25

Maine Heritage Orchard Stewardship Apple The Maine Organic Farmers and Gardeners Association (MOFGA) recently established the Maine Heritage Orchard in a renovated gravel pit in Unity. The terraced polyculture orchard will be unlike any orchard anywhere. Under the direction of Fedco's John Bunker, nearly 300 apple trees have been planted so far with many more to come. You can join in this effort by becoming an Apple Steward. By purchasing a Heritage Orchard Stewardship Apple, you become the proud keeper of one of the varieties represented in MOFGA's orchard. In the event that the orchard's tree dies, you'll have the backup so we can collect scionwood for grafting another. We'll send you a rare historic apple tree with a description if it's not listed in this catalog, and a form to fill out. After planting your tree, you return the form with the tree's location to MOFGA. MOFGA will contact you from time to time. $30 from the sale of each tree goes to support the Maine Heritage Orchard (MeHO) project. For more information go to mofga.org. All trees best grown from Z4-6. **ME Grown.**

224A Stewardship Apple, $50.00

all? Taulman? Talman? Tallman? Tollman? Tomey… errr…**Tolman Sweet**! **Twenty Ounce** is really that big: a pound and a quarter. After you've had a **Westfield**, you'll **Seek no Further**—

Wickson Fall. Esopus Spitzenburg x Newtown Pippin. Albert Etter intro, Humboldt County, CA, 1944. One of the most intensely flavorful apples we list. Small roundish bright red fruit is crisp, juicy, tart, tangy and spicy. Extremely high in both sugar and acid. Sugar level of the juice is around 25%. Highly recommended for dessert. Keeps until January. Becoming one of the most sought-after American cider apples, both for blending and as a single varietal. In September the tree looks like a mass of cherries. Bred and introduced by the generally unknown Albert Etter, one of America's most innovative and important fruit breeders of the 20th c. Wickson bears young, heavily and annually. Blooms midseason. Z4-8. **ME Grown.**

199A Wickson, $30.25
199C Wickson on M111, $30.25

Williams Pride Summer. Co-op 23 [PRI 2845-1=(PRI 1018-101 x NJ50)] PRI Co-op, 1988. Probably the most popular summer apple among the newly developed disease-resistant introductions. It's actually crisp, which is rare for a summer apple. Deep purple roundish-conic irregularly shaped fruit highlighted with areas of glowing rosy red and covered with a thin bloom. Light cream-colored flesh with red staining just under the skin. Firm, crisp and very juicy. Has a nice acidic blend of tart and sweet, reminiscent of Fameuse. Long ripening period means you don't have to eat them all at once. Vigorous annually bearing tree with some biennial tendency. Well shaped with strong right-angled branches that do not require careful training. Highly resistant to fireblight, cedar apple rust and sooty blotch; resistant to powdery mildew. Scab immune. Blooms early to midseason. Z4-7. **ME Grown.**

200A Williams Pride, $30.25

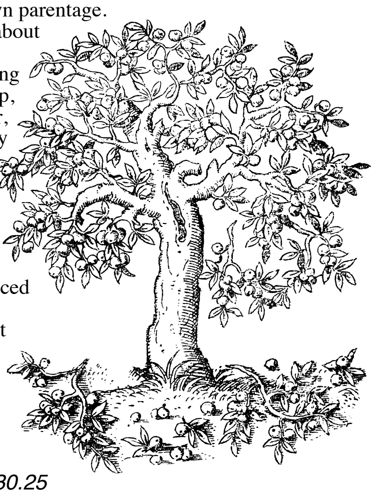
Wolf River Fall. Alexander seedling. Near Wolf River, WI, 1875. Perhaps the most famous old-time apple in Maine, likely due to its catchy name and its extremely large—even huge—round-oblate fruit. Pale yellow-green skin mostly covered with pink, deep red and bright crimson with a vivid yellowish-greenish russety splash around the stem. Creamy-white coarse firm but tender flesh. Aromatic subacid flavor is very good for cooking. Makes an excellent baked apple and a decent pie. Not much good for fresh eating, but particularly tasty when dried. Keeps until late fall. Large moderately vigorous productive spreading tree. Excellent scab resistance. Blooms mid to late season. Z3-5. **ME Grown.**

204A Wolf River, $30.25

Yarlington Mill Fall. Medium-bittersweet cider apple. Yarlington, near North Cadbury, Somerset, England, 1898. Rich brown low-acid juice, mildly aromatic, fruity and not aggressively tannic. Above-average sugar content. (SG 1.053-1.075, acidity 2.2g/L, tannin 3.2g/L) Slow to medium fermentation. Medium-sized yellow distinctly conic fruit with a pinkish blush and overspreading darker red stripes. Considered an all-round excellent cider variety: reliable, productive and adaptable to varying conditions including reports of thriving in Zone 3. Steve Wood's other favorite bittersweet (see Dabinett). Highly recommended for home and commercial cider plantings. You may need to head back the leader in early years to encourage strong laterals. Midseason bloomer. Z3/4-6. **ME Grown.**

205A Yarlington Mill, $30.25
205C Yarlington Mill on M111, $30.25

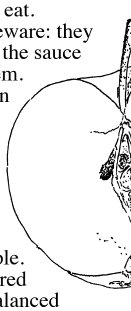
Yellow Bellflower Winter. Unknown parentage. Crosswicks, Burlington County, NJ, about 1742. Large conical pure-yellow fruit does everything well, including keeping all winter in the root cellar. Firm, crisp, moderately fine-grained, rather tender, juicy, aromatic, very good for culinary use and good for fresh eating, especially after it's mellowed for a month or two. Excellent for pies. Applesauce cooks quickly, somewhat coarse, bright glistening yellow with great flavor and chewy skins. We also love it dried: it's balanced and flavorful. One of the first named American varieties and one of the first apples to be grafted and planted in Maine. Incredibly long-lived. When you find a truly ancient apple tree in Maine, there's a pretty good chance it'll be a Yellow Bellflower. Blooms early-midseason. Z4-7. **ME Grown.**



206A Yellow Bellflower, $30.25

PPA = Plant Patent Act. Unauthorized propagation of the plant is prohibited. The use of PPA in the catalog is for informational purposes only and does not constitute an endorsement by Fedco of plant patenting.

Yellow Transparent Summer. Unknown parentage. Russia, probably before 1800. Brought to the U.S. in 1870 and quickly spread throughout Maine. One of our most-requested varieties. Medium-sized light yellow fruit has a tender skin you can almost see through. Tart fresh eating and cooks up into a flavorful slightly tart light yellow sauce in 6–7 minutes. Skip the sugar. Skins will dissolve in your mouth as you eat. Transparents ripen fairly early in August and beware: they come mostly all at once and go by quickly. Get the sauce pot ready and don't blink or you might miss them. It's okay to eat or cook them a little on the green side. When the first of them fall to the ground, pick the rest within a week or so. Incredibly hardy. Blooms midseason. Z3-6. **ME Grown.**



207A Yellow Transparent, $30.25

Zestar Late Summer. (State Fair x MN 1691) U Minn, 1999. Also called **Zestar!** Extremely hardy high-quality mid-late summer dessert apple. Medium-sized blocky round fruit covered with red stripes and blush. Juicy and crisp with a well-balanced acid-sweet flavor. Michael Phillips, New Hampshire orchardist and author of *The Apple Grower*, said to me, "When you tree-ripen Zestar, it's fabulous." Northern Maine orchardist Steve Miller added, "That's an impressive apple. From the standpoint of appearance and quality, they're first rate." Keeps in cold storage up to 7 weeks. Tree has moderately vigorous upright form; excellent horizontal branching habit makes it easy to train and prune. Precocious and annual-bearing. Blooms early season. **PPA**. Z3-5. **ME Grown.**

208A Zestar, $30.25
208B Zestar on B118, $30.25

Bunker's bookshelf: required reading for fruit enthusiasts

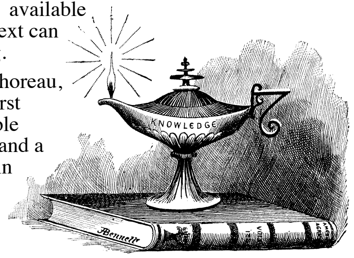
The Illustrated History of Apples in the United States and Canada by Daniel J. Bussey, edited by Kent Whealy. Seven volumes, hardback, 2017. For 30 years Dan Bussey systematically and meticulously transcribed and compiled more than 16,000 apple descriptions using hundreds of historic sources. Kent Whealy of Jak Kaw Press spent 7 years editing Dan's work into 7 volumes. This will be the most important book on apples ever published in English. There has never been anything like it. This is the book for orchardists, researchers, historians, nurserymen, collectors and dreamers. It is the ultimate apple reference encyclopedia with 16,350 descriptions illustrated with 1,400 magnificent historic USDA apple watercolors. We encourage you to purchase a set directly from the publisher. For details, go to: jakkawpress.com or call (844) 567-5888.

Apple Varieties in Maine by Frederick C. Bradford, 1911. A gold mine for northern New York and New England fruit explorers. You can download a free version at digitalcommons.library.umaine.edu. This was Bradford's masters thesis at UMaine. *Apples of Maine* by George Stilphen is a reprint of Bradford, but print copies are dear.

A View of the Cultivation of Fruit Trees by William Coxe, 1817. Essential reading for anyone interested in the early history of cider in the U.S. Descriptions of fruit varieties, primarily apples, and detailed information on cider. Many of the varieties listed are probably extinct. You may never locate an original edition of this book, but a good reprint was issued by Pomona Books in 1976. It can also be downloaded free at archive.org.

The American Orchardist by James Thacher, 1825. Of particular interest to those interested in early apple history. Descriptions of many American apples originating before 1800. Includes a great deal about cider. Highly recommended. A new reprint is available from Palala Press, and the entire text can be downloaded free at archive.org.

"Wild Apples" by Henry David Thoreau, 1862. This wondrous essay was first published in *The Atlantic*. Available online in *The Atlantic*'s archives, and a number of versions can be found in print, sometimes included in Thoreau anthologies. Find it and reread it every few months—it's that fantastic.



The Apples of New York by Spencer Ambrose Beach, 1905. 2-volume set, 764 pages, hardcover. This two-volume encyclopedia of apples grown throughout the U.S. before 1900 is an essential text for apple enthusiasts. I refer to Beach almost every day of the year. Don't be misled by the name—it's not just about New York. Although it misses many of our obscure local varieties, Beach covers hundreds of the most important historic varieties you'll come across. It's not a searchable key, but it is fantastic with good-to-excellent histories, detailed descriptions and color images. Volume one includes a general history of apples and an explanation of relevant terminology related to apple identification. Original sets of *The Apples of New York* are still out there although prohibitively expensive for most folks. We're offering a very decent hardcover reprint—good for those who want to go easy on their first editions, and great for those who can't lay out the big bucks for an original. No need to wait until spring to receive *The Apples of New York*. We'll ship it within a few weeks of receiving your order.

L628A The Apples of New York, $175.00

just kidding! There are too many other apples to try! The **Yellow**-fruited tree has **Flowers** so **Belle** you'll drift into French. **Zestar!** doesn't mean anything, and why the exclamation point?

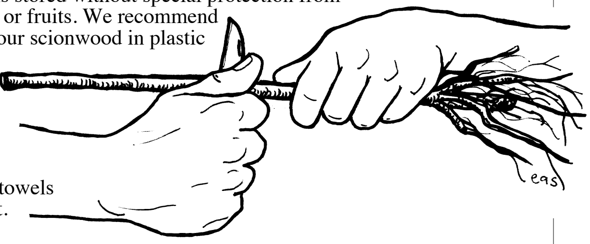
Scionwood

We offer scionwood (twigs for grafting) from a wide selection of fruit trees including many listed in this catalog. Scionwood is shipped only in March. Price is $5.00 per stick (about 8") plus shipping. Rootstock can be sent with your scionwood order in March if you order it from the Scionwood form (pages 37-38) or select that option online.

We sell scionwood, also called scions, in two ways. For those grafting up to 3 or 4 trees of a variety, one 8" stick will suffice. Each single 8" stick comes with a small paper ID label. This is how most of our customers purchase scions. For orchardists grafting large numbers of trees of a particular variety, we also offer scionwood by the foot ($4.50 per foot, minimum order of 10 feet). In our own nursery work, we are usually able to graft about 6 or 8 trees from one foot of scionwood.

The list of this year's scionwood offerings is on page 38. You'll find descriptions for these varieties on our website.

We collect the scionwood in winter and store it at about 40° until shipment in March. You can graft right away or store it for later use. Stored properly, it will keep quite well for several weeks. It needs to be kept in the fridge or in a cold dark basement, root cellar or shed. Storing scionwood at freezing temps can be okay (we have friends who stick theirs in a snow bank), but the *very* cold temperatures in a freezer will kill it. It will also die if it dries out or is stored without special protection from ripening veggies or fruits. We recommend *triple-bagging* your scionwood in plastic bags, no matter where you store it. There is no need to dampen the scionwood or to insert wet paper towels before bagging it.



- **Deadline** for ordering scionwood is **February 15, 2019.**
- Scionwood will be shipped to you around March 11.
- **Scionwood varieties** are listed on page 38.

Scions are not trees!

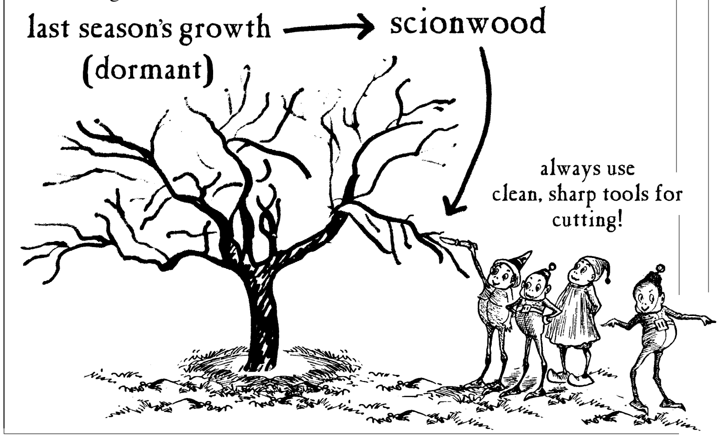
Scions are twigs, not trees. They have no roots and will not grow if you plant them. They are cuttings from branch tips collected in the winter, intended for grafting in the spring.

Is grafting easy to do? Yes and no. It is an acquired skill. Experienced grafters often have 100% "take" (success rate) with their grafting. Beginners often have less than 50% take—or even zero. While you can learn to graft from a book or video, we highly recommend the old-fashioned way of learning: find a real person to teach you. MOFGA (Maine Organic Farmers and Gardeners Association) has grafting classes every spring. Other organizations around the country do as well.

There are two general ways to graft fruit trees in spring. You can **bench graft** by grafting scionwood onto bare-root rootstock. Generally we do this indoors in late March or early April. We keep the little grafted trees packed into a bucket of damp sawdust in a warm spot in the house (77–86°) to break dormancy and promote callus development. Then we harden them off in a cold (but not freezing) place for a week or two before planting out in the nursery in mid-to-late May. In a couple of years when the trees are 3–4' tall, we plant them in the orchard. You can grow your own rootstock from seed or purchase it from us. You can also **topwork** scionwood onto established trees. We do our topworking after the trees have begun to show some green growth, usually about May 10 in central Maine.

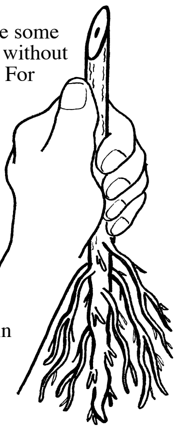
Can you collect your own scionwood? Of course! Grafting can open up a whole new world for you. You can purchase scionwood from Fedco and several other suppliers around the country. You can trade scionwood like you would baseball cards or recipes. And, best of all, you can collect your own scionwood from your favorite trees. We're always on the lookout for interesting varieties to graft. Before long, you may even become completely obsessed like many of us at Fedco!

We offer grafting supplies in the Organic Growers Supply section of the Seed catalog or online at **fedcoseeds.com**.


last season's growth → scionwood
(dormant)
always use clean, sharp tools for cutting!

Hardy Rootstocks

We consider these to be some of the best rootstocks for home or commercial use. Even without grafting, any of these produces fruit suitable for wildlife. For rootstocks not listed, or for larger calipers or larger quantities, please write for information.



Please note! We do our best to provide 1/4" caliper stock. Because of factors beyond our control (such as weather!) stock may be 3/16–3/8". We cannot guarantee scion or rootstock diameter.

Because of the way they are propagated, clonal rootstocks (B118, M111, G11, B9 apples and OHxF97 pear) rarely come with more than a few roots.

You may order rootstock for shipment around March 11 by using the scionwood order form, available in this catalog, page 37. Rootstock ordered on the regular order form in this catalog, page 35, will be shipped with the rest of the Tree order later in March or April. Both options are also available online.

***Malus* 'Antonovka'** (Apple) Hardy Russian seedling rootstock for full-sized "standard" apple trees. The hardiest rootstock we offer. Space trees 20–30' apart. Z3.

225A Malus Antonovka, bundle of 10, $29.50

***Malus* 'Budagovsky 118'** (Apple) [Moscow Pear x (M8 and M9 pollen)] Michurinsk College of Ag, Michurin, Russia. Also called **Bud 118** or **B118**. Semi-dwarf rootstock, about 85–90% of standard. Sometimes referred to as a "semi-standard" or even a standard. Space trees 20–25' apart. More productive and fruits sooner than trees on Antonovka. Very winter hardy and soil adaptable. Generally not used in commercial orchards due to its large size. Note that reddish cambium does not scrape green like other rootstocks. Resistant to collar rot. Unknown susceptibility to fireblight. Z3.

226A Malus Budagovsky 118, bundle of 10, $29.50

***Malus* 'M111'** (Apple) [Northern Spy x Merton 793 (Northern Spy x East Malling11)] Collaborative intro of East Malling Research Stn and the John Innes Institute, Merton, England, about 1950. Technically named MM111, the MM refers to Malling and Merton. Very popular semi-dwarf rootstock produces a tree about 65–80% of standard. Space trees 15–20' apart. No staking necessary. Fruits at a slightly younger age than standards. Well anchored and adaptable to a wide range of soils. Resistant to woolly aphid. Not nearly as long-lived as standards. Hardy to Z4, maybe Z3.

227A Malus M111, bundle of 10, $29.50

***Malus* 'Geneva 11'** (Apple) Also called **G11**. Cornell University intro, NY. Dwarf rootstock produces a tree about a third the size of standard, about halfway between M9 and M26 (a bit larger than Bud 9). Space trees 8–10' apart. Suckers only slightly. Moderately susceptible to woolly aphid. Excellent fireblight resistance. Requires staking, weeding and watering in most locations. Z4/5.

228A Malus Geneva 11, bundle of 10, $33.50

***Malus* 'Budagovsky 9'** (Apple) [M8 x Red Standard (Krasnij Standart)] Also called **Red-leafed Paradise** or **Bud 9**. Michurinsk College of Ag, Michurin, Russia, 1946. Dwarfing rootstock, produces a tree about a quarter the size of a standard tree. Highly productive and precocious (fruits at a young age) with large fruit size. Very hardy though not as hardy as Antonovka. In most locations, requires weeding, mulching, staking and irrigation. Space trees 5–10' apart. Note that reddish cambium does not scrape green like other rootstocks. Some resistance to fireblight. Z4.

229A Malus Budagovsky 9, bundle of 10, $29.50

Prunus americana (Plum) Seedling rootstock for American, Japanese or hybrid plums. Also recommended for grafting peaches. Seedling plum produces very decent 1" fruit without grafting. The best pollinator for hybrid plums. (See explanation in plum section on page 22.) Z3.

230A Prunus americana, bundle of 10, $29.50

***Prunus avium* 'Mazzard'** (Cherry) The rootstock we use for grafting sweet and pie cherries. Shallow spreading root system. Longer lived than Mahaleb though not as hardy. Does not do well in heavy poorly drained soils. Z4/5.

231A Prunus avium Mazzard, bundle of 10, $29.50

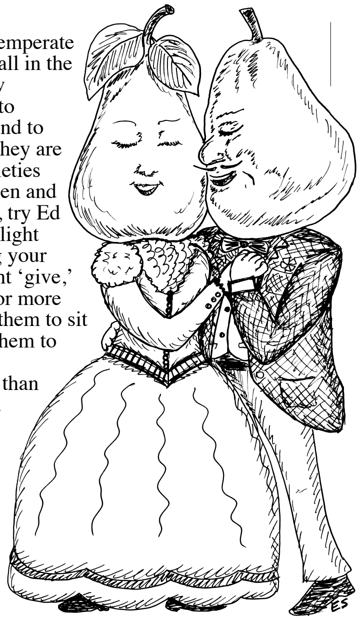
***Prunus cerasifera* 'Myrobalan'** (Plum) Seedling rootstock for European plums. Not recommended for American or hybrid plums. Z3.

232A Prunus cerasifera Myrobalan, bundle of 10, $29.50

***Pyrus* 'OHxF97'** (Pear) (Old Home x Farmingdale 97) Produces a vigorous hardy well-rooted almost-standard-sized tree. Superior to *Pyrus communis* in numerous ways, and can be used for both European and Asian pears. We use "97s" for our Fedco catalog offerings. Z3/4.

233A Pyrus OHxF97, bundle of 10, $29.50

Please join us Sunday, March 31, 2019, for the annual Scionwood Exchange and grafting workshop in the exhibition hall of MOFGA's Common Ground Education Center in Unity, ME. Hosted by Fedco, the Maine Tree Crop Alliance and MOFGA. See mofga.org to find out about more organic orcharding classes and events.



Pears *Pyrus communis* are native to temperate Europe and Asia and can grow up to 100' tall in the wild. Many pear varieties are hardy in New England but tend to take longer to come into bearing than apples. Farther south, pears tend to bear annually. However, in Maine, where they are approaching their northern limit, some varieties tend to bear biennially. Pick fruit when green and ripen it on the shelf. Or, for optimal eating, try Ed Fackler's method: "…when fruits exhibit slight color changes, begin to test pressure (using your thumb) near the stem. When there is a slight 'give,' pick all the fruit, store at or near 35° for 7 or more days. Then remove them as needed, allow them to sit at room temps for 2–4 days which allows them to ripen to peak flavor."

Pear blossoms are less attractive to bees than apple blossoms, so pears should be planted closer together to ensure pollination. Although some pears appear to be self-pollinating, **we recommend a second variety for pollination**. Bloom dates for all varieties are similar.

Pears are on OHxF97 rootstock and will reach 25' or taller at maturity; plant 15–20' apart. (2$^{1}/_{2}$-6' trees)

Bartlett Late Summer. Seedling found in Aldermaston, England. Introduced to the U.S. in the late 1700s. Also known as **Williams' Bon Chrétien**. The most widely planted and well known of all pears, accounting for 75% of the U.S. commercial crop. Adaptable to many climates and soils. Large greenish-yellow classic oblong obtuse-pyriform fruit; very good quality. Full reliable annual crops. Large vigorous easy-to-grow long-lived tree bears young. I used to think you couldn't grow Bartlett in central Maine, but I've changed my mind. Now I recommend it as a good choice south of Bangor. Susceptible to fireblight. Good pollinator for Asian Pears. **Will not pollinate Seckel.** Z4. **ME Grown.**

242A Bartlett, $31.25

Blakeney Red Fall. Medium-sharp perry pear. Unknown origin, possibly a seedling of Thorn, from the village of Blakeney in the Forest of Dean, England, 19th c. Sometimes called **Painted Lady**, **Painted Pear**, **Circus Pear** and **Red Pear**. Beautiful small-medium turbinate or obovate red-blushed fruit is about 2" wide. Firm and juicy, but not for fresh eating. Traditionally used in cooking, jams and particularly in perry (pear cider). Classified as a medium-sharp perry pear, with medium acidity and medium tannins. Productive and best blended with other perry pears. Once grown throughout much of the English West Midlands, still quite popular in the U.K. Perry makers across the U.S. are planting it now, too. Z4.

243A Blakeney Red, $31.25

Bosc Fall. Seedling introduced by Van Mons, Lourain, Belgium, 1807. Also called **Beurre Bosc**. Oblong acute-pyriform, or large and long-necked; dark rich yellow covered with cinnamon-brown russet. Distinctive sweet rich spicy buttery flavor. Melting juicy tender white flesh has smooth texture and a pleasing aroma. Somewhat gritty around the core. Large vigorous upright spreading tree bears huge crops annually. Good pollinator for other varieties. A longtime favorite throughout central Maine. Z4. **ME Grown.**

244A Bosc, $31.25

Cabot Vermont Fall. An old dessert pear, c. 1850, discovered in Cabot, VT, a few miles west of the New Hampshire border and about as far north as Bangor, ME. Introduced to us many years ago by Armando Bona of Passumpsic, VT. A superior dessert pear with medium-large oblong obovate-pyriform fruit. Yellowish skin has a slight reddish blush. Yellowish sweet flesh is coarse grained, extremely juicy, with no grit cells. Not only is it a delicious dessert fruit, it is also remarkable for its very rare "double" flowers. Highly ornamental! Not to be confused with the old Massachusetts pear Cabot. Annual and self-pollinating. Very hardy. Z4 or possibly even Z3. **ME Grown.**

245A Cabot Vermont, $31.25

Dana Hovey Winter. Thought to be a seedling of Seckel. Roxbury, MA, about 1854. Introduced by 19th-c. fruit enthusiast Francis Dana who dubbed it "Dana's Hovey" in honor of CM Hovey, Boston nurseryman and author of *The Fruits of America*. Sometimes called **Winter Seckel** because of its similarity to Seckel. Small obovate-obtuse-pyriform rich golden-yellow russeted fruit. Intensely sweet highly aromatic tender storage pear has excellent flavor; possibly the best eating of all winter pears. Keeps extremely well. Harvest in October and store in a cool dry spot. Still great eating in December—sometimes even as late as February. Hardy vigorous moderately productive spreading tree adapts to a variety of soils. No scab and relatively few bugs. Z4. **ME Grown.**

247A Dana Hovey, $31.25

Gin Fall. English perry pear. Probably from the Newent area of Gloucestershire, England. Greenish-yellow, russeted and red-blushed skin. Small to almost-medium, in the 2" range. Not for fresh eating. Makes a high-quality aromatic perry reminiscent of juniper, hence the name. Medium sharp with medium acidity and medium tannin. Often blended with Blakeney Red these days in western England. Said to be disease resistant. Z4.

248A Gin, $31.25

Hendre Huffcap Fall. Heirloom English perry pear. Probably originated near the villages of Bromsberrow and Haresfield in Gloucestershire, England, before 1900. Typically small fruit less than 2" in diameter. Yellowish skin partly russeted. Not for fresh eating. Sweet and astringent, with low acidity and low tannin. A huffcap is an old English term for a strong drink that makes your head swell and your hat levitate up off your hair. You could eat a huffkin teacake with your Huffcap perry, but if my perry is better than your perry, no need to leave in a huff. We'll drink both. Z4.

249A Hendre Huffcap, $31.25

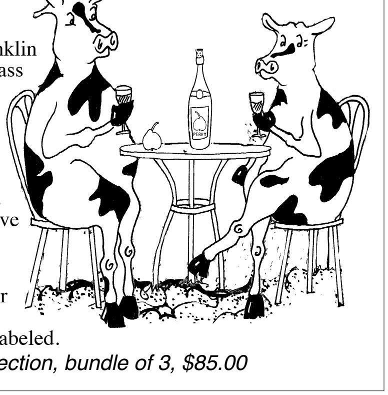
Hudar Summer. Parentage unknown. Originated on Hudar Farm, Hammond, NY. St. Lawrence Nursery intro, 1988. Very early pear ripens late July. Annually productive medium-sized fruit has thin yellow skin with faint blush. Dotted and slightly russeted near the stem. Sweet juicy flavorful flesh great for fresh eating or canning. The earliest pear fruit expert Bob Purvis of Idaho brings to markets. In a good year tree yields up to 75 lbs of fruit. Very hardy. Moderate fireblight resistance. Self-fertile. Z2. **ME Grown.**

250A Hudar, $31.25

Perry pear trees

Perry is fermented pear juice—the pear equivalent of hard cider. While you can ferment any pear juice, the best perry is made from small dry astringent varieties selected over the centuries just for that purpose. Most of these perry pears are not suitable for dessert or cooking. Traditionally, real perry could be made only within sight of May Hill on the border of Gloucestershire and Herefordshire in western England, which we visited in 2011. The trees were very tall and really old, and the perry was delicious. That edict has relaxed a bit and some version of perry is now being made most everywhere pears can be grown. The Orne region of Normandy is famous for its *poire*. We were there in 2014 and those trees looked about as old as the ones within sight of May Hill. At Franklin County CiderDays in western Mass you should be able to sample some very tasty perry at the amateur tastings.

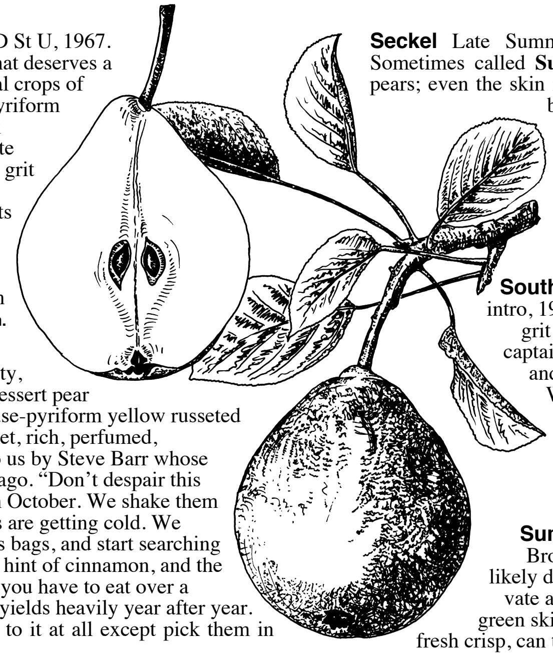
We're offering this collection of 3 trees to get your perry orchard started. These trees are a good investment—they should live to be about 300 years old.



Perry Pear Collection

A bundle of 3 trees to begin your perry orchard. Collection will include 3 different varieties, all labeled.

264A Perry Pear Collection, bundle of 3, $85.00



Luscious Early Fall. SD E31 x Ewart. SD St U, 1967. One of the few recent pear introductions that deserves a place in the home orchard. Produces annual crops of delicious medium-sized oblong obovate-pyriform fruit. Bears so heavily that it's apt to break branches. The soft fine extra-juicy off-white flesh is sweet and flavorful with almost no grit cells. Thin yellowish skin is covered with small tan dots. Anecdotal evidence suggests that it may crop best when grown near Bartlett or one of the Asian pears. Although some literature warns that Luscious itself is a poor pollinator, we've been happy to have it at our place. Z3. **ME Grown.**

251A Luscious, $31.25

McLaughlin Fall. Probably Oxford County, ME, before 1800. Excellent high-quality dessert pear keeps well into winter. Medium-large obtuse-pyriform yellow russeted fruit, sometimes with a reddish blush. Sweet, rich, perfumed, extremely juicy and melting. Introduced to us by Steve Barr whose family's tree was planted about 120 years ago. "Don't despair this pear comes off the tree like a green rock in October. We shake them down after Columbus Day when the nights are getting cold. We bring them inside and place them in canvas bags, and start searching in a week or two. The taste is sweet with a hint of cinnamon, and the texture delightful, not mealy. A juicy pear you have to eat over a napkin or cut it up and eat out of a bowl…yields heavily year after year. This pear is easy to grow, we do nothing to it at all except pick them in October." Z4. **ME Grown.**

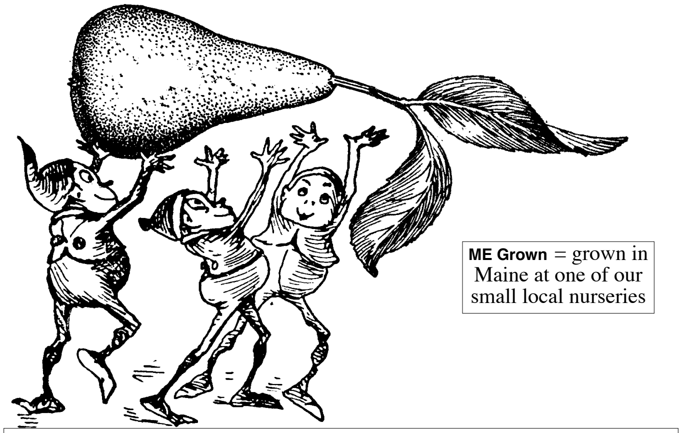
252A McLaughlin, $31.25

Nova Late Summer. Hammond, NY. Discovered and introduced by Bill MacKentley of St Lawrence Nurseries, Potsdam, NY. Large yellow roundish dessert pear with melting juicy flesh. Chris Blanchard's favorite pear. For decades he and Liz Lauer have been trialing a wide assortment of pears a few hours north of here in Penobscot County. He described it as "large with smooth creamy texture and a thin skin. Wonderful dessert pear. Also the best canning of our 12–14 varieties." Holds its shape in the jar. Very hardy, though from our trials in northern Aroostook County, not quite as hardy as Patten. Appears to be fireblight and scab free. Z3. **ME Grown.**

253A Nova, $31.25

Patten Late Summer. Orel 15 x Anjou. CG Patten intro, Iowa St U, 1922. Very good fresh eating with sweet "high flavor." Fine-grained soft flesh has minimal grit cells. Vaguely reminiscent of Bosc in size and shape. Good canning pear. Tree is extremely adaptable, growing all over the Northeast. Long willowy very flexible branches won't break even under the weight of its heavy crops. Fared incredibly well during the cold "test winter" several years ago when hundreds of northern Maine pear trees died to the roots. Extremely hardy and highly recommended for coldest districts. A good pollinator for other varieties. Scab resistant. Z3. **ME Grown.**

254A Patten, $31.25

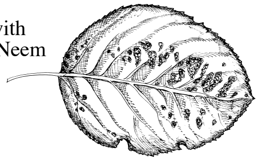


ME Grown = grown in Maine at one of our small local nurseries

Pear Leaf Blister Mite

Pear leaf blister mites can sometimes be a problem for pear growers in the U.S. The tiny mites overwinter under the budscales and become active in spring. They are too small to see with the naked eye, but you'll know you have them if pear foliage looks like it has red blisters that eventually turn black. We recommend a dormant oil or pure neem oil spray in spring just before the pears leaf out. You can also do a sulfur spray in the fall. (Apply appropriately, with protection. Read labels.)

As a precaution, we spray Fedco pear trees with pure neem oil in the spring before shipping. Neem oil spray is organically certifiable and poses no risk to you, your pets or the environment. We have noticed that trees often outgrow the infection even if you do nothing at all.



Seckel Late Summer. Seedling near Philadelphia, PA, early 1800s. Sometimes called **Sugar Pear**. Often considered the best-flavored of all pears; even the skin is delicious. Small obovate fruit is russeted yellowish-brown with slight red blush. Juicy, spicy, distinctive and aromatic. Eat ripe off the tree, or pick firm and ripen later. We use Seckels to make our baked pear sauce. It's wonderful. Very productive annual-bearing large tree, easy to grow. *The* most reliably bearing pear tree we have in our home orchard. Scab and fireblight resistant. **Will not pollinate Bartlett.** Z4. **ME Grown.**

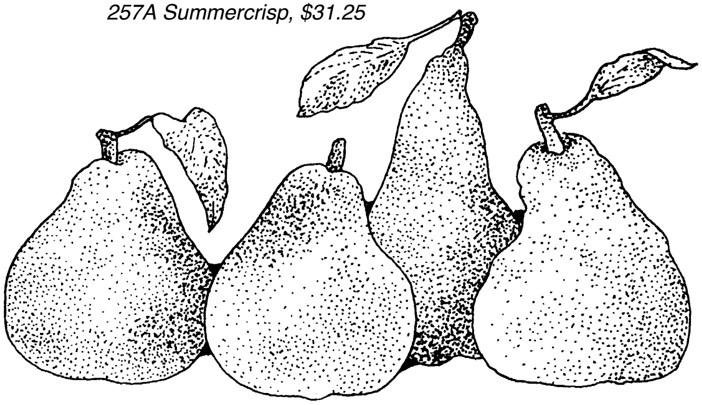
255A Seckel, $31.25

Southworth Fall. Parentage unknown. St Lawrence Nursery intro, 1968. Green skin rarely blushed. Firm juicy flesh has few grit cells and good flavor. In the early 1900s, a Great Lakes captain transported the original scionwood from Duluth, MN, and grafted onto two trees at his property in Massena, NY. When Frank Southworth owned the property in 1967, he brought it to the attention of Fred Ashworth and it was introduced a year later. Medium-sized tree is vigorous and very hardy. Moderate fireblight resistance. Self-fertile. Z3. **ME Grown.**

256A Southworth, $31.25

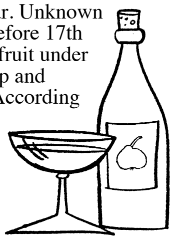
Summercrisp Midsummer. MN N33201 (Gaspard No. 5) Brought to the MN Hort Res Stn by John Gaspard in 1933, likely discovered as a wild seedling. U Minn, 1986. Large obovate acute-pyriform very sweet dessert and canning pear with green skin and a red blush. Ripens in August in Maine. Eat them fresh crisp, can them in quarters, and juice the rest. Precocious annually bearing tree, medium-sized with typically conic habit. Considered the hardiest variety in the Minnesota collection. Free from fireblight. Z3. **ME Grown.**

257A Summercrisp, $31.25

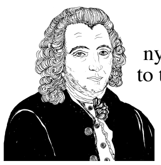


Yellow Huffcap Fall. Ancient English perry pear. Unknown origin, possibly from Herefordshire, likely well before 17th or even 16th c. Small oval yellow-green russeted fruit under 2" in diameter. Not for fresh eating. Medium sharp and astringent with high acidity and medium tannin. According to Craig Campbell of Tieton Cider Works in Yakima, WA, Yellow Huffcap makes the best perry. Z4.

258A Yellow Huffcap, $31.25



Two Amblers

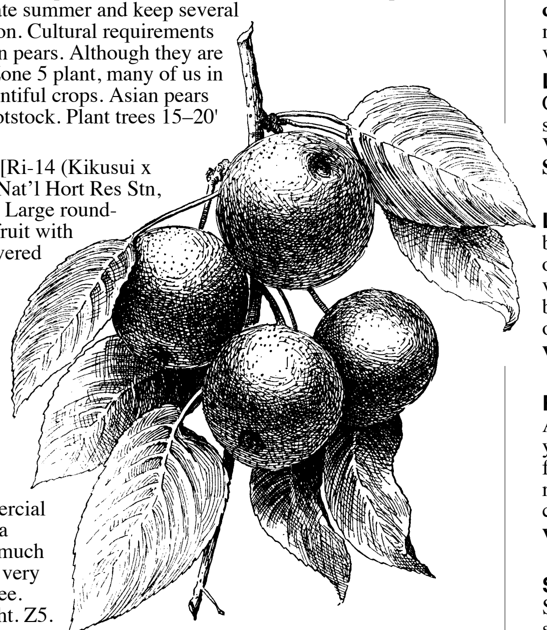


Linnaeus was ambling along an arctic bog and came upon a plant not yet named in the archives of European science. He decided to call it *Dryas octopetala*, its name to this day. In his Lapland Journal he wrote, "I have called this plant *Dryas* after the dryads, the nymphs that live in oaks, since the leaf has a certain likeness to the oak leaf." (Many Greek references made their way into botanical names, a reflection of the classical education of the time.) From the species name, *octopetala*, we can assume the flower has eight petals, which distinguishes it in the Rose family, whose members typically have only five.

In 1880, Maine plant explorer Kate Furbish was ambling along the St. John River and came upon an unknown plant. She sent it to Harvard for identification. When the Harvard muckety mucks determined that this was the first collected specimen on record in the entire world, Furbish's friends petitioned to have the plant named in her honor: *Pedicularis furbishiae*. *Pedicularis*, the genus name, means 'louse,' a kind of parasite. This genus is part of the Broomrape family of parasitic plants, meaning their roots draw nutrition at least in part from other plants. Furbish's plant is commonly known as Furbish's Lousewort.

And so it goes that we now have a gazillion botanical names, each one unique to the plant it represents. Most names paint an interesting history or contain useful information about the plant and its relatives.

Asian Pears *Pyrus pyrifolia* have been grown in China, where there are thousands of named cultivars, for more than 2000 years. They are long-lived and bear young. Asian pears differ from European pears: they are crisp and very juicy, sweet and mild with a nutty background, and are roundish in shape. **Although partly self-fruitful, pollinators are recommended.** The varieties we offer will pollinate one another. Some European pears, notably Bartlett, will also act as pollinators. Because they set heavily, thin the crop once or even twice during the first two months after bloom to ensure large fruit. Leave about one fruit per spur. Unlike European pears, they should be tree-ripened. When the seeds are black, the pears are ready. They ripen in late summer and keep several weeks with refrigeration. Cultural requirements are similar to European pears. Although they are usually considered a Zone 5 plant, many of us in Zone 4 are having bountiful crops. Asian pears are on Betulaefolia rootstock. Plant trees 15–20' apart. (2$^{1}/_{2}$-6' trees)



Hosui Late Summer. [Ri-14 (Kikusui x Yakumo) x Yakumo] Nat'l Hort Res Stn, Tsukuba, Japan, 1972. Large round-oblate long-stemmed fruit with medium-thick skin covered with glowing yellow-orange-golden brown russet and numerous light-russet dots. Firm crisp fine-textured juicy mild subacid yet sweet rich-flavored white to off-white flesh is considered by some to be the best-flavored of all Asian pears. Standard commercial variety. Will store for a month. *Hosui* means 'much water.' Medium-sized very vigorous productive tree. Susceptible to fireblight. Z5.

265A Hosui, $31.25

Nijisseiki Late Summer-Fall. Chance seedling "found on a rubbish heap" by Kakunosuke Matsudo at Ishii, Chiba Prefecture, Japan, 1898. Also known as **Twentieth Century**. White flesh is mild-flavored, crisp, juicy, medium-sugar and high acid. Medium-large greenish-yellow semi-glossy fruit is roundish-oblate. This is the pear that, along with Chojuro, kicked off the Asian pear industry in Japan and became the standard to which all others are compared. Tree is medium-sized, upright and spreading. Stores up to 6 months in cool storage. Used extensively in modern Japanese pear breeding programs. Ripens a couple of weeks later than Shinsui. Z5/6. **ME Grown.**

266A Nijisseiki, $31.25

Shinko Fall. Nijisseiki seedling, Japan, 1941. *Shinko* means 'new success' in Japanese. Medium-large lumpy round brownish russeted fruit. Yellowish flesh is sweet, crisp and juicy, with very good flavor. Ripens late and stores up to 3 months. Moderately vigorous precocious annually bearing tree. In addition to the other Asian pears, Bartlett is also a good pollinator for Shinko. Fireblight resistant. Z5.

267A Shinko, $31.25

Shinseiki Late Summer. Nijisseiki x Chojuro. Teiji Ishikawa intro, Okayama Prefecture Ag Exp Stn, Japan, 1945. Medium-sized round-oblate light to medium-bright yellow fruit, with little to no russeting. Flesh is white, crisp, sweet and mildly tart with lots of juice. *Shinseiki* means 'new century.' Keeps about 3 months in storage. Dense spreading precocious productive tree. Cold hardy. Disease resistant. Z5. **ME Grown.**

268A Shinseiki, $31.25

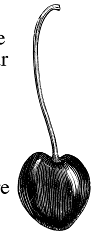
Shinsui Summer. Kikusi x Kimizukawase. Hort Res Stn, Yatabe, Japan, 1967. Medium-sized round-oblate yellowish-brown russeted fruit with crisp juicy fine-textured very sweet flesh. Excellent fresh eating. Not as firm as other Asian pears. One of the earliest to ripen each year. Pennsylvania grower and Asian pear aficionado Ike Kirschner considers this a great pear. Keeps about 6 weeks in refrigeration. *Shinsui* is translated as 'new water,' 'adoration,' 'inundation' and more. It is also the pseudonym of one of Japan's most famous 20th-c. artists, Ito Shinsui (1888-1972). Even if you don't know his name, you will likely recognize his iconic colorful prints of young women. Z5/6. **ME Grown.**

269A Shinsui, $31.25

Yoinashi Fall. Fowler Nurseries intro, Newcastle, CA, about 1987. Large conic light brown russeted fruit. Fine-textured off-white flesh is crisp, juicy, aromatic and sweet. Means 'good pear' in Japanese. It is a good variety! One of the folks at Fowler Nurseries described it to us as having "a little bit of a zip" to it. Harvest after Hosui and before Shinko. Upright medium-vigorous tree. Moderate tolerance to fireblight. Z5. **ME Grown.**

270A Yoinashi, $31.25

Stone Fruits *Prunus* spp. are widely cultivated around the world and adaptable to most of New England. Not highly particular as to soils. **Clingstone** means the fruit's flesh clings to the pit (or stone) and a **freestone** pit drops away from the flesh.



Sweet Cherries *P. avium* generally grow into large trees although the flowers are tender and fruiting can be iffy in Maine. But we've tasted some right off the tree in central Maine; they were amazingly delicious! We are testing some of the hardiest varieties and hope to have more available in coming years. **Most sweet cherries need a second variety for pollination.** See descriptions for pollination requirements. We recommend planting two or more of the following varieties for best results. Space trees 25' apart. (2$^{1}/_{2}$-6' trees)

Lapins Summer. Van x Stella. Summerland Research and Development Centre, BC, Canada, 1983. Large sweet high-quality black-mahogany-red–skinned fruit. Ripens a week after Stella, by mid-July in warmer districts. Very vigorous, productive and upright; crops consistently in central Maine. **Self-pollinating**, but benefits from planting with another variety. Z4.

274A Lapins, $31.75

Leningrad Summer. Possibly Black Eagle x Black Tatar. Russia. May also be known as Leningrad Black. Very good-quality dark red fruit. In our ongoing effort to locate the best of the hardy sweet cherries, we have been very impressed with Leningrad. Friend and fruit explorer Mark Fulford brought this one to our attention. Survived –30° with minimal winterkill in our central Maine orchards. Upright vigorous tree. **Requires a second variety** for pollination. Z4. **ME Grown.**

275A Leningrad, $31.75

Rainier Summer. Wash.P1-680 (Bing x Van) Harold W. Fogel intro, WA Ag Exp Stn and USDA, 1960. Classic dessert cherry. Very large fruit, light yellow skin with red blush. Firm fine-textured flesh with a distinct delicious flavor. Colorless juice. Similar to Bing. Good fresh or canned. Quite resistant to cracking. Ripens midsummer. Vigorous productive tree. Early to come into bearing. One of the hardiest sweet cherries. **Requires a second variety** for pollination. Z5.

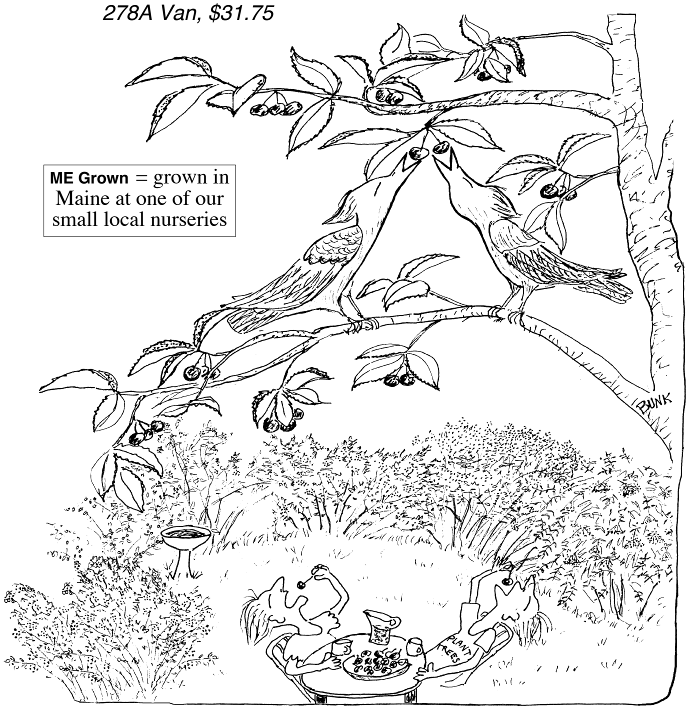
276A Rainier, $31.75

Stella Midsummer. 2C-27-19 (Lambert x John Innes Sdlg. 2420) Summerland Res & Dev Ctr, BC, Canada, 1968. Hardy good-quality self-fertile sweet cherry. Large heart-shaped black-skinned fruit has juicy medium-firm black flesh. May be a disappointment to sweet cherry aficionados from the Northwest but could be a dream come true for orchardists in the North. The fruit buds are relatively tender, but we've received encouraging reports that the tree is doing well in Minnesota. Upright spreading vigorous productive tree will grow to 25–30'. **Self-pollinating**, but yields may increase if planted with other varieties. Pollinates other sweet cherries. Z5.

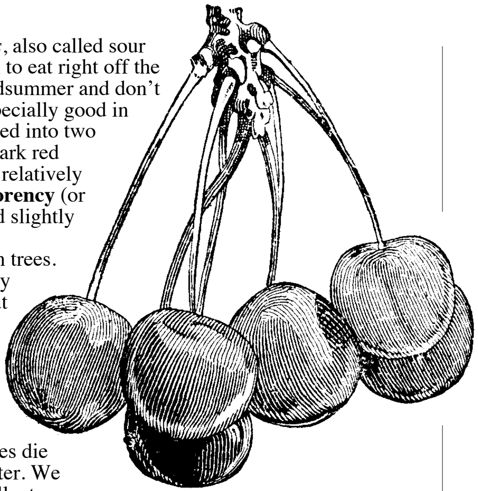
277A Stella, $31.75

Van Summer. Empress Eugenie x open-pollinated. Summerland Res & Dev Ctr, BC, Canada, 1944. Later than other varieties. Bing-type almost-black medium-to-large fruit. Very firm though somewhat susceptible to cracking. Heavy annual crops. Strong vigorous upright tree. Considered hardier than most varieties. Excellent pollinator, but **requires a second variety** for pollination. Z5, but worth trialing in Z4.

278A Van, $31.75



ME Grown = grown in Maine at one of our small local nurseries



Pie Cherries *P. cerasus*, also called sour cherries, are delicious enough to eat right off the tree. They fruit in early to midsummer and don't mind heavy soil. They are especially good in pies. They are generally divided into two groups: **Morello** types have dark red spherical fruit, dark juice and relatively small compact trees. **Montmorency** (or Amarelle) types have light red slightly flattened fruit, clear juice and medium-sized somewhat open trees.

Pie cherries are significantly hardier than sweet cherries but can be frustrating to grow. Although the trees are fully hardy in Zone 3, flower buds may be damaged in colder winters. Some growers in Maine have reported large harvests only to have their trees die unexpectedly a year or two later. We regularly hear reports of excellent crops, so we know it can be done. We are very interested in your successes and failures. If you have had experiences you think might be useful to others, please be in touch. **Pie cherries are self-pollinating, and do not require another variety for pollination**. Plant 15–20' apart. (2½-6' trees)

English Morello Summer. Netherlands or Germany, before 1860. Sometimes called **Grosse Cerise a Ratafia**, **Grosse Lang Lothkirsche**, **Griotte du Nord**, **Morris** and **Colorado Morello**. Very dark red-black skin. Dark red flesh and juice. Excellent culinary cherry, recommended for pies and all other cookery. Ripens late, after Montmorency. Distinctive small roundish tree with drooping branches. Brown-rot resistant. One of the most famous of all pie cherries. Despite the name we know it by, it is thought to have originated on the Continent, eventually finding its way to England and then North America. Z4/5.

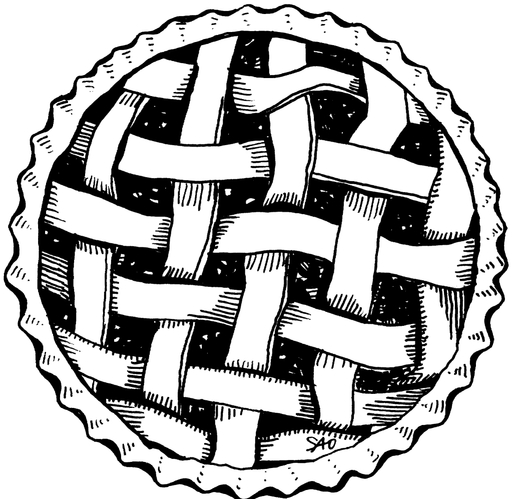
281A English Morello, $31.75

Evans Mid-Late Summer. Unknown parentage. Edmonton, Alberta. Also called **Bali**. Rescued from obscurity in 1976 by Dr. Ieuan Evans for whom it was named. Popularized by Bill MacKentley of St. Lawrence Nurseries. Large crops of Morello-type fruit are excellent for eating, jams, jellies, pies, dark red juice and wine. Can be very hardy and produce good-quality fruit, but our results in Zone 3 have been inconsistent. Naturally dwarf tree, tolerant of a wide range of soils, although prefers light fertile soils. Z3/4.

282A Evans, $31.75

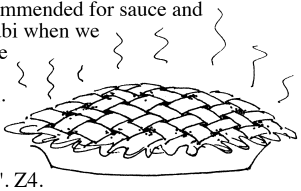
Garfield Plantation Summer. Unknown origin. Garfield Plantation, ME. Heirloom pie cherry grown for generations on an Aroostook County farm. One of our most promising finds in our search for varieties that really produce well. In the spring of '09, Garfield trees in northern Maine flowered and fruited after –44°! Bright red fruit is similar to Montmorency. Hardy, productive, extremely long-lived, and proving to be very resistant to disease in our northern trials. Although the original tree is long gone, it lives on in the form of innumerable young trees that have suckered up to 100' or more behind the farm along the edge of the ubiquitous potato field. Recommended for trial in all areas of northern New England. Z3. **ME Grown.**

283A Garfield Plantation, $31.75



Ugh! Who cares?

You may notice that we refer to different "varieties" of fruits when they should be called cultivars. And sometimes we call something a cultivar that is technically a variety. We do our best, but in the plant trade these words are often used incorrectly and interchangeably. Please don't tell the International Botanical Congress we said this, but none of it matters much. What matters are things like cherry pie.



Mesabi Summer. Bing x chance seedling (Sweet x sour cherry) Duluth, MN, 1964. Red skin and lighter red flesh with clear juice. Considered a sour cherry, but sweeter than other types. Recommended for sauce and pies. We became very curious about Mesabi when we heard reports of 20-year-old trees in Maine remaining healthy and productive. About ten years ago we began a trial on our farm. Our tree has shown no dieback and is fruiting again this summer. It has also remained entirely disease free. Naturally dwarf-sized tree will grow to about 10–14'. Z4.

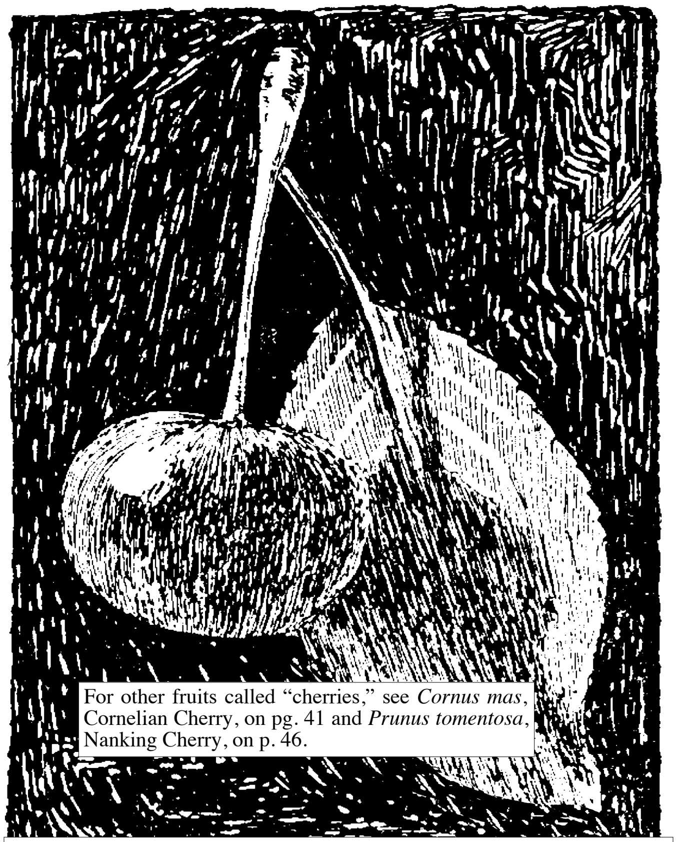
284A Mesabi, $31.75

Montmorency Summer. Seedling of Cerise Hâtive or Cerise Commune. Montmorency Valley, France, before 1600. Introduced to the U.S. about 1830. The most famous of all pie cherries. Not widely grown in Europe or Russia but long the standard of excellence in the U.S. Firm-fleshed bright red fruit makes a clear light pink juice. Surprisingly hardy, though not as hardy as Garfield Plantation or Evans. Our Aroostook County test orchard trees fare better than Meteor. Should do really well from central Maine south. Appears to be resistant to brown rot. Vigorous productive medium-sized upright-spreading tree tolerates a variety of soils. Z3/4.

285A Montmorency, $31.75

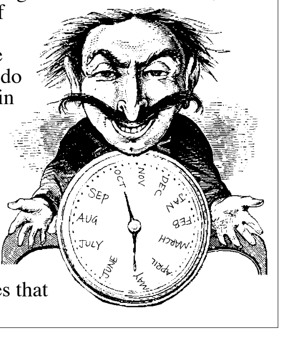
North Star Summer. MN 58 (English Morello x Serbian Pie #1) U Minn, 1950. Morello-type cherry can be eaten fresh when ripe. Large roundish heart-shaped fruit with a small stone. Dark glistening mahogany-red skin. Dark red meaty tender juicy flesh has pleasantly acid flavor. Very productive. A natural dwarf. Resistant to brown rot and cracking but may not be long-lived in some locations. Z3.

286A North Star, $31.75



For other fruits called "cherries," see *Cornus mas*, Cornelian Cherry, on pg. 41 and *Prunus tomentosa*, Nanking Cherry, on p. 46.

Relative ripening dates

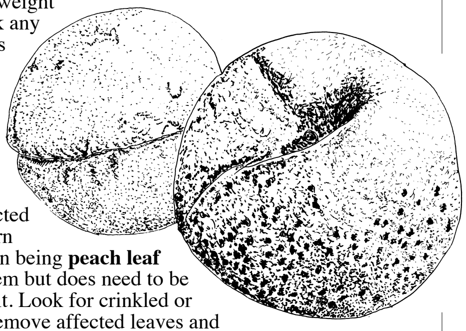


Although our catalog focuses on woody plants that do well in the northeast, we have customers all over the U.S.—up along the Canadian border, in the mid-Atlantic states, down in the mountains of North Carolina and out west in the high desert—anywhere hardiness is important. We love having customers so spread out, and we do our best to tell you when a variety will ripen in your orchard. But it's not easy. A fruit that ripens in September in northern Maine might ripen a month earlier in Pennsylvania. Ripening dates also vary from year to year depending on conditions. Not only that, the fruit might be exquisite up north but rather blah farther south. That's the nature of these varieties, and it's part of why we offer so many each year. We think you'll find varieties that can thrive in your area.

Peaches

P. persica Northern New England peach trees can do very well. They bear young and so heavily that they may break branches if unthinned or unsupported. Trees may also die unexpectedly at any age. Up here peach trees can take big hits some winters. In recent years some of the trees out in the open at our place died to the ground. The survivors got pretty beat up. However, the young espaliered peach trees planted against the south side of our house look great. 2017 was a great year for many trees in central Maine, while 2018 was a little dicey.

Prune peach trees in spring after the buds begin to swell and show pink. Remove dead and inward-growing branches. Make a few bold cuts to bring main branches closer to the trunk. Peach trees grow vigorously each year and fruit on last year's wood. The goal is to keep trees small and open; leggy branches will break from the weight of the crop. After cutting back any main branches, thin last year's shoots and cut them back to about 12–18". When you're done, the tree shape should look something like an open hand reaching for a peach, with the tree not much taller than 10' or so.



Peaches are usually unaffected by pests or diseases in northern areas, the occasional exception being **peach leaf curl**. PLC is not a fatal problem but does need to be controlled if you get hit with it. Look for crinkled or puckered foliage in spring. Remove affected leaves and compost them. Spray the tree with lime sulfur or copper early the following spring while it is still dormant (before any buds open!) Onion, garlic or horsetail spray while leafed-out may also be effective.

Peach trees are self-pollinating; they do not need a second tree for pollination. Mature trees will be 10–15' tall by 10–15' wide and should be planted 20' apart. (3-6' trees)

Contender Late. NCT 544 (Winblo x complex parentage of North Carolina selections) DJ Werner, JR Ballington and DF Ritchie intro, Ag Exp Stn, Raleigh, NC, 1988. This fairly new high-quality variety is proving to be hardy in northern Maine. Large round bright red and yellow freestone fruit with a slightly raised suture. Firm melting aromatic yellow flesh. Growth habit similar to Red Haven, but fruit ripens 3 weeks later. Resistant to leaf spot. Because it blooms quite late, it might escape late spring frosts. Z3/4.

306A Contender, $30.25

Garnet Beauty Early. A sport of Red Haven discovered by Garnet Bruner in 1951 and introduced in Ruthven, Ontario, 1958. Medium-to-large yellow-fleshed semi-clingstone fruit with excellent flavor. Causing some buzz in northern peach-growing districts. We have two trees on trial at our place. The earliest peach we offer; ripens 12 days before Red Haven with similar hardiness. Vigorous and productive tree. Good bud hardiness. Recommended for colder districts. Z4/5.

307A Garnet Beauty, $30.25

Lars Anderson Early. Uncertain origin. Pastor Chuck Orchards, Cushing, ME. Large juicy sweet yellow-fleshed freestone fruit. Lars Anderson's son-in-law Waite Maclin (aka Pastor Chuck) brought this tree to our attention several years ago. Waite described the fruit as "tasting just like a peach should taste. When I give them away to friends and neighbors they think the peaches have been purchased in the South." Lars Anderson planted the tree on the Maine coast about 1965. He died in 1981 but the family continued to maintain the peach, even after a huge 1982 nor'easter blew the tree to the ground and split it in half. After the old tree finally succumbed in 2009, Waite sent us a monogrammed slice of trunk, which we display on our mantle. Z5. **ME Grown.**

308A Lars Anderson, $30.25

Madison Late. Ideal x Red Haven. VA Stn, 1963. A fine peach for the North, with hardiness similar to Red Haven (though it ripens 3 weeks later, around the time of the Common Ground Country Fair). Medium-large fruit with bright orange skin and bright red blush. Orange-yellow firm fine-textured juicy flesh with excellent very sweet rich peach flavor. Very good quality. Skin peels easily. Freestone, excellent canner. Very productive. Exceptional tolerance to blossom-season frost. Z5.

310A Madison, $30.25

Red Haven Early-Mid. Halehaven x Kalhaven. MI Ag Exp Stn, 1940. Considered hardy, but not as hardy as Reliance. Medium-sized round fruit with beautiful red and golden-yellow skin and sweet firm fine-textured yellow flesh. Non-browning. Excellent for eating, freezing, canning, shipping. Probably the best-flavored peach we offer; also the world's most widely planted freestone peach. Hardy buds; vigorous highly productive disease-resistant spreading trees are tolerant to bacterial spot. Z5/6.

311A Red Haven, $30.25

Reliance Early-Mid. Open-pollinated seedling of Minn PHO 4559 x Meredith. NH Ag Exp Stn, 1964. Considered the hardiest peach. Medium-sized, roundish, freestone. Rather dull red blush over greenish yellow. Bright yellow flesh, soft and juicy. Flavor usually considered fair, but we love it in Maine. Often produces large crops. Bears at an early age. May have some resistance to peach leaf curl. Z3.

312A Reliance, $30.25

FEDCO•TREES
AUGUST
lg

Who controls the nomenclature?

There are two international codes for controlling the nomenclature, or naming, of plants. The International Code of Botanical Nomenclature (ICBN) is a formal statement of rules for naming algae, fungi and plants in the wild. Plants named following this code are published as the International Plant Names Index, a database available online (ipni.org) through a collaboration of The Royal Botanic Gardens, Kew; Harvard University Herbaria; and the Australian National Herbarium.

But who can make changes to the IBCN? The International Botanical Congress, of course! The Congress, established in 1864 in Brussels, is made up of botanists and scientists from around the world and meets every six years in a different location to debate and vote on proposed changes to the ICBN. The most recent Congress convened in Shenzhen, China, in 2017, so the current version of the ICBN is known as the Shenzhen Code.

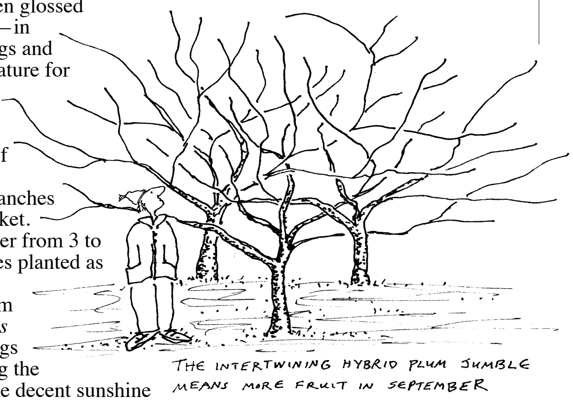
The International Code of Nomenclature for Cultivated Plants sets the rules and recommendations for naming plants in cultivation. In its 9th edition, the Code establishes important guidelines, such as, "The use of two exclamation marks in a cultivar name will be permitted provided they are not adjacent to one another." Thank goodness for rules!!

Hybrid Plums

Prunus spp., extremely hardy crosses between various Asian and American species, may fruit even after severe winters.

Hybrid plums require a second variety for pollination. Hybrid plum pollination has been glossed over—or avoided—in virtually all catalogs and fruit-growing literature for generations. Here's what we recommend:

Plant a cluster of trees close enough together for the branches to mingle as a thicket. Our clusters number from 3 to nearly a dozen trees planted as close as 10' apart. Include native plum pollinators (*Prunus americana* seedlings or varieties) among the hybrids. With some decent sunshine during bloom, you should get good fruit set. We suggest Toka and South Dakota as good pollinators in addition to *P. americana* or *P. nigra* seedlings or grafted trees in the orchard. We include the American plum seedling in this hybrid section because it may be the best pollinator for the hybrids. In an orchard setting, space trees 15–20' apart.



THE INTERTWINING HYBRID PLUM JUMBLE MEANS MORE FRUIT IN SEPTEMBER

Bloom times are similar for the varieties we offer; however, some growers have been concerned that the American plums, including South Dakota, bloom later than the hybrids. Some years, this can be an issue. Ideally you would plant at least 4 different varieties. Regardless of which ones you plant, you should get a good mix of pollen when each variety is in bloom. If you have the space, consider our Hybrid Plum Collection to cover all the bases of pollination.

Pollination may also improve with heat. Growers in warmer districts often report better success with pollination. This may be because the heat prolongs the bloom season, increasing the number of trees with simultaneous available pollen.

A long cold spring may also help with pollination. When the plums finally bloom, they all bloom at once.

At maturity, hybrid plums are roughly 15–20' tall by 15–20' wide.

Not susceptible to black knot. (3-6' trees)

American Plum Seedling *P. americana* 15-20' Not a hybrid, but included here since it may be the best pollinator for hybrid plums. Seedling plum that grows in thickets and produces very decent red, yellow and orange 1" fruit, suitable for fresh eating, canning and freezing. Spectacular white bloom in spring. Red fall color. Plant singly as a graceful specimen or plant 10' apart and let the branches intertwine for maximum pollination. Tends to sucker freely. Plant one of these for every 3 or 4 plum trees, within 10' of each of them. This tree stock is significantly larger than plum seedling rootstock (see page 16.) Extremely hardy. Z3. **ME Grown.**

316A American Plum Seedling, $21.00

Black Ice Midsummer. *P.* Lydecker [*P. besseyi* x (*P. salicina* Oka x *P. sal.* Z's Blue Giant)] U of WI, River Falls, 2006. Large 2" round early-ripening high-quality hardy blue-black dessert plum. Very sweet juicy reddish-purple semi-freestone flesh. Precocious and productive tree with a naturally compact growth habit. Bred by Brian Smith, whom we visited a few years ago on a fruit exploration trip in the Upper Midwest. He graciously showed us all through his amazing nursery in River Falls. He was growing many of his plums in huge tubs, manipulating bloom time using greenhouses and coolers. This enabled him to cross species or varieties that would never normally flower together. Though we're not fans of plant patenting, we are pleased to offer his first major introduction. The literature recommends Toka or La Crescent as a pollinator. Now in trials at our farm. **PPA**. Z3.

317A Black Ice, $31.25

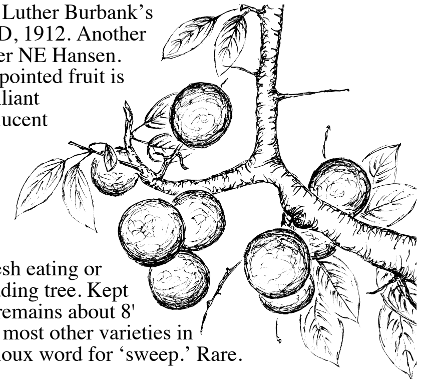
Cocheco Midsummer. Purple Heart x unnamed red-leaf plum. Elwin Meader intro, Rochester, NH, 1968. Red-orange medium-sized fruit with soft sweet pinkish flesh. One of the first to ripen midsummer. In a lengthy *Maine Sunday Telegram* article on Sept. 8, 1968, Meader said, "It's an example of being able to have your cake and eat it. The new tree is beautiful enough to be an ornamental. It also has delicious fruit and windbreak value." Red twigs and buds in winter, light pink flowers in spring, glossy red foliage all summer long. Even from 100' away, it is a strikingly beautiful sight. Relatively large tree with an upright growth habit. May be self-pollinating, though we recommend treating it like other hybrid plums. Z4. **ME Grown.**

318A Cocheco, $31.25

Hanska Summer. *P. a.* x *P. simonii*. NE Hansen intro, Brookings, SD, 1908. Medium-sized bright red fruit with a heavy bluish bloom. Firm fragrant yellow semi-freestone flesh. When cooked, the fruit has a strong apricot-like flavor reminiscent of its Chinese "apricot plum" parentage. The fruit resembles its sister seedling, Kaga. *Hanska* is the Sioux word for 'tall' referring to the tree's fast growth in the nursery. We agree! It's grown quite rapidly in our orchard. Though Hansen gave it a lengthy write-up in his 1927 Plant Introductions Bulletin, Hanska all but disappeared and remains one of the rarest of his introductions. We're happy to offer it in our catalog. Z3/4. **ME Grown.**

319A Hanska, $31.25

Kahinta Mid-Late Summer. Luther Burbank's *P. sal.* Apple x *P. a.* Terry. SD, 1912. Another intro by the great plant breeder NE Hansen. Large 1 1/2" roundish slightly pointed fruit is flattened at the stem end. Brilliant red-purple tart skin and translucent yellow-orange tart but quite flavorful flesh. Easy to peel; peeled fruit looks like a peeled tangerine. Or you can bite a small hole in the skin and suck out the juicy flesh. Clingstone. Very good for fresh eating or canning. Medium-sized spreading tree. Kept pruned, our 20-year-old tree remains about 8' tall. Bears more reliably than most other varieties in our orchard. *Kahinta* is the Sioux word for 'sweep.' Rare. Z3. **ME Grown.**



320A Kahinta, $31.25

La Crescent Late Summer. *P. sal.* Shiro x *P. a.* Howard Yellow. U Minn, 1923. Also known as **Golden La Crescent** or **Golden Minnesota**. Most of the hybrid plum varieties are colored with some variation of red and orange with a little purple tossed in. Yellow-skinned La Crescent is one notable exception. The beautiful roundish tender thin-skinned yellow fruit is sometimes blushed with a little pink. Tender yellow juicy flesh of excellent quality is sweet, aromatic and suggestive of apricots. Freestone. Upright spreading vigorous tree. Z3/4. **ME Grown.**

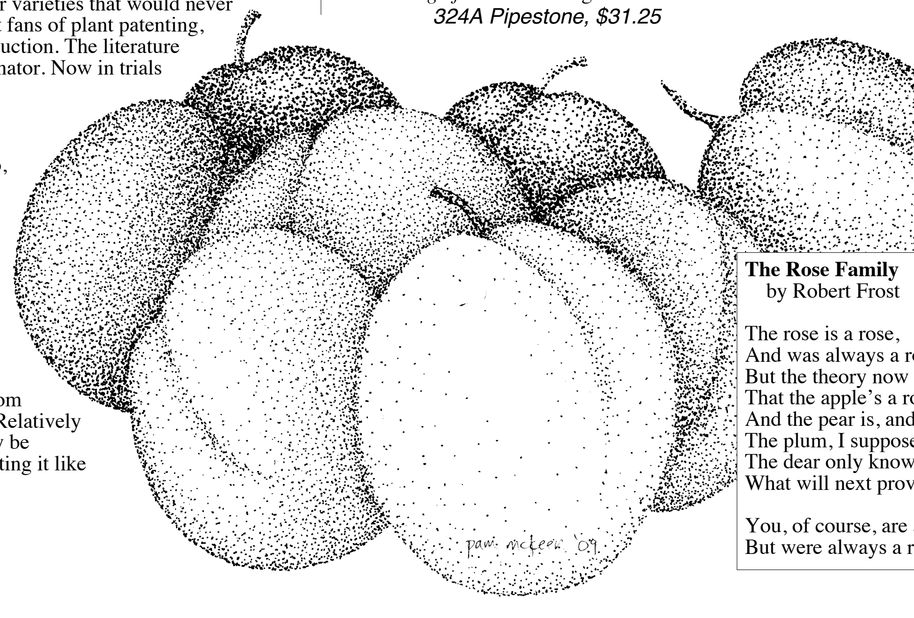
321A La Crescent, $31.25

Pamela Late Summer. *P. a.* seedling, Westmanland, ME. High-quality sweet-fleshed totally freestone medium-small fruit. Reddish skin with yellowish undertones. Productive and extremely hardy. Flowers with a pinkish tone. An excellent pollinator for other hybrid and American plums. Many years ago, longtime Fedco growers Steve and Barb Miller purchased a hybrid plum from another nursery. The grafted plum never did well but the rootstock sprouted from below the graft and eventually fruited. It was so good, they began to graft it around the farm. When Steve first told us about the plum, he just called it Pam (from *P. americana*). We decided to dignify it a bit. Z3. **ME Grown.**

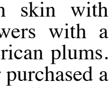
323A Pamela, $31.25

Pipestone Late Summer. MN 218 [*P. sal.* Burbank x (*P. sal.* x *P. a.* Wolf)] U Minn, 1942. Juicy yellow-fleshed clingstone plum with excellent sweet flavor. Tough yet thin skin peels easily. Large deep red fruit with a golden blush presumably named in honor of the beautiful red catlinite rock of Pipestone, MN, home of one of the most famous Native American quarries, long considered to be a sacred site by the tribes who mined the quartzite rock for their pipes. Designated a national monument in 1937, Pipestone makes an appearance in Henry Wadsworth Longfellow's 1855 epic poem *The Song of Hiawatha*. Vigorous reliable tree. Z3. **ME Grown.**

324A Pipestone, $31.25



The Rose Family
by Robert Frost



The rose is a rose,
And was always a rose.
But the theory now goes
That the apple's a rose,
And the pear is, and so's
The plum, I suppose.
The dear only knows
What will next prove a rose.

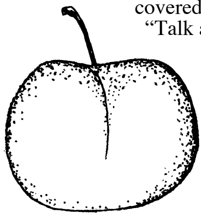
You, of course, are a rose—
But were always a rose.

South Dakota Late Summer. SD 27. *P. a.* Unknown parentage. U Minn/SD Ag Exp Stn, 1949. Small-to-medium fruit has firm yellow skin with bright red blush. Medium-firm yellow flesh is meaty, juicy, sweet. Excellent fresh-eating quality. Fully freestone. Because of its very long flowering period and American pedigree, we recommend South Dakota as a pollinator for all hybrid plums. In our orchard it's still blooming when the other plums have dropped their flowers. Also ripens after the hybrids are done. Developed by NE Hansen before 1907. One of Hansen's students took it to the breeding program at the University of Minnesota where it was later introduced. Vigorous tree. Z3. **ME Grown.**

325A South Dakota, $31.25

Superior Late Summer. MN 194 [*P. sal.* Burbank x (*P. a.* x *P. sim.*) Kaga] U Minn, 1933. Very large conical dark red plum with a heavy bloom and superior dessert quality. Firm sweet yellow flesh is smooth-textured, extremely juicy and clingstone. Precocious production, vigorous tree. May show some dieback in coldest locations, likely because of its Burbank parentage. Z3/4.

326A Superior, $31.25

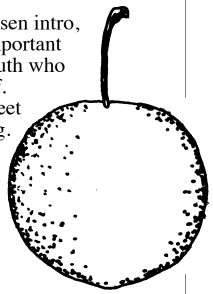


Toka Late Summer. (*P. a.* x *P. sim.*) NE Hansen intro, SD Exp Stn, 1911. Rosy red fruit, up to $1^{1}/_{2}$" in diameter, mottled with darker purplish-red and covered with a faint bloom. Grower Don Johnson's comment: "Talk about flavor: candy plum." Ed Fackler called Toka the best-flavored plum he grew in his Indiana orchard. Sweet, distinctive, meaty and flavorful. Not real juicy. Somewhat freestone. Extremely vigorous tree blooms heavily every year. Diligent pruning may be required to keep it from becoming a bit of a monster. Considered a good pollinator for other hybrid plums because of its long bloom period. Z3.

327A Toka, $31.25

Underwood Midsummer. MN 91 [(*P. sim.* x *P. sal.* Shiro) x *P. a.* Wyant] U Minn, 1921. Medium-to-large 2" dull red fruit. Firm sweet juicy golden-yellow semi-freestone flesh, very good for eating and cooking. Long picking season. Blooms earlier and longer than most hybrids and appears to be a very good pollinator for other hybrid plums, including Purple Heart. Northern Maine grower Steve Miller considers it one of his most reliable bearers. Long ripening season. Vigorous large spreading tree. Z3. **ME Grown.**

328A Underwood, $31.25

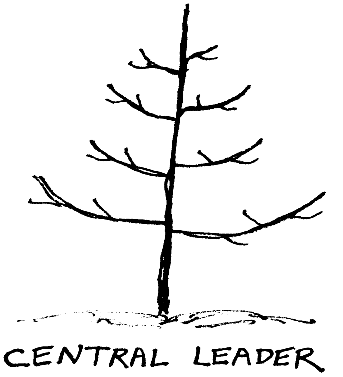


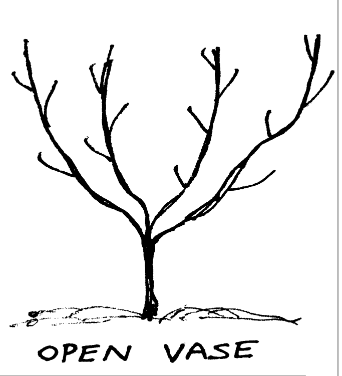
Waneta Midsummer. (*P. sal.* Apple x *P. a.* Terry) NE Hansen intro, SD Exp Stn, 1913. Released when hybrid plums were an important and commercially viable crop. Named after a Yanktonai youth who won fame in the War of 1812 and later became a great chief. Large, somewhat pointed, $1^{1}/_{2}$–2" reddish-maroon fruit. Sweet tender translucent orange flesh is very juicy but not dripping. Medium-thick skin, tart and easy to peel. Delicious overall taste. Hansen said of Waneta: "My belief is that in this variety I have combined the best points of the native and the Japanese plum. It is probably the largest [fruit] of over 10,000 seedlings." Early blooming healthy open spreading tree bears reliably in our orchard. Z3. **ME Grown.**

329A Waneta, $31.25

Hybrid Plum Collection Our choice of 7 trees to begin your plum orchard, including at least two pollinators, one of which will be an American Plum Seedling, *P. americana*. Trees are individually labeled.

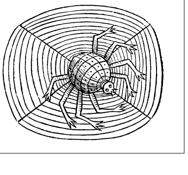
333A Hybrid Plum Collection, bundle of 7, $194.00

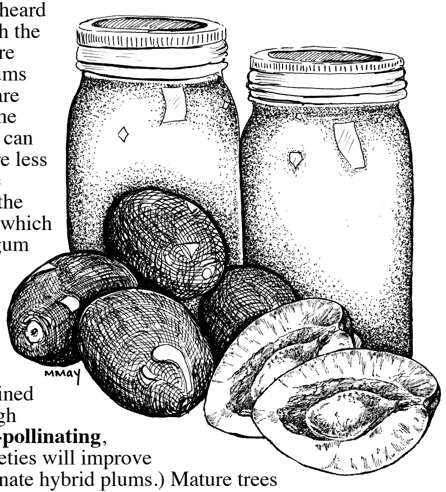




Fruit-growing websites

Whether you use organic or conventional orchard practices, several websites can provide you with a great deal of information about insect and disease pressure, spray timing, frost predictions and a whole lot more.
Here are a few of the best:
UMaine Cooperative Extension:
umaine.edu/ipm/programs/apple/
Cornell University: fruit.cornell.edu/
University of Vermont: uvm.edu/~fruit/
UMass Extension Fruit Program: ag.umass.edu/fruit
Holistic Orchard Network: groworganicapples.com/





European plums *P. domestica*

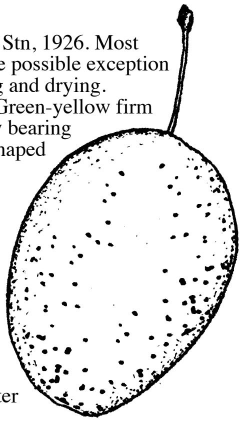
Delicious fresh and often grown commercially for prunes. A true prune is a plum that can be dried without the pit fermenting. We've heard recommendations to blanch the plums for 45 seconds before drying them. European plums produce smaller fruit and are generally not as hardy as the hybrid plums, though they can handle heavier soils and are less prone to brown rot. Unlike hybrids, they are prone to the fungal disease black knot, which looks like black chewing gum and appears on branches. While not necessarily fatal, it must be kept in check by removing and destroying infected branches. Trees grow upright and are usually trained to a central leader. Although **European plums are self-pollinating**, planting two different varieties will improve pollination. (Will not pollinate hybrid plums.) Mature trees are roughly 15–20' by 15–20', or smaller. Space 20' apart. (3-6' trees)

Green Gage Mid-Late Summer. Unknown origin, maybe *P. d.* x *P. institia*. Probably Armenia, long before 1500. Also called **Reine Claude**. Often considered the best of all dessert plums. Small round semi-freestone yellowish-green fruit sometimes mottled with red has tender juicy melting flesh with rich flavor. A favorite in Europe for more than 500 years. Long referred to as Armenian plum, suggesting its possible point of origin, though no one knows for sure. Found its way to Greece and Italy and then introduced into France in the early 16th c. where it acquired the name Reine Claude in honor of the wife of Francis I. Later brought to England by the Gage family. While a number of Gages have been selected over the years, Green Gage is the original. Medium-sized tree bears heavily. Not long-lived. Fruit susceptible to cracking. Z4.

334A Green Gage, $31.25

Mount Royal Late Summer. Chance seedling, Outremont, Quebec, before 1903. Popular plum in Quebec and the northern U.S. for many years. Also called **Mont-Royal**. Discovered by Mr. Corse in or near Montreal sometime between 1830 and 1850. Bears abundant annual crops of medium-sized roundish dark purple fruit. Often considered the sweetest of the European plums. The flesh is greenish-yellow, juicy and firm. Use fresh, dried, frozen, canned and in preserves. Medium-sized tree is open with good crotch angles and requires only moderate pruning. Z3.

335A Mount Royal, $31.25



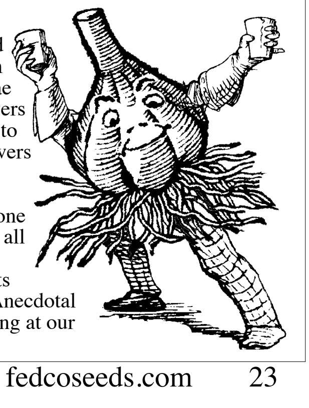
Stanley Late Summer. Agen x Grand Duke. NY Stn, 1926. Most popular European prune plum in America with the possible exception of 'Italian.' Excellent for cooking, eating, canning and drying. Medium-to-large oval fruits with dark blue skin. Green-yellow firm but tender juicy fine-grained sweet flesh. Reliably bearing fast-growing adaptable medium-to-large funnel-shaped tree produces healthy vigorous annual crops. Z4.

336A Stanley, $31.25

Valor Late Summer. Imperial Epineuse x Grand Duke. Vineland Stn, Ontrario, 1967. An excellent all-purpose semi-freestone joining our selection for the first time. Large high-quality fruit has purple-blue speckled skin and greenish-yellow flesh. Best for fresh eating but, like the others, also good dried or canned. In our central Maine trials, this plum has been productive, cold hardy and resistant to bacterial leaf spot. Ripens a bit after Stanley, in late September or early October. Z4.

337A Valor, $31.25

Plum Curculio... and garlic



Plum curculio is a small pesky insect, a terrible plum and apple pest. We have read that laying sheets of cardboard under plum (and apple) trees will smother the PC pupae developing in the soil. Many organic growers spray Surround clay powder on their trees to combat this weevil. (See the Organic Growers Supply section of the Seed catalog for this and other orcharding supplies.)

Many years ago we planted garlic near one of our apple trees and neglected to harvest all the bulbs. Now we have a small colony of garlic plants around the tree. Recent reports are touting garlic as a curculio deterrent. Anecdotal evidence suggests the garlic may be working at our place. Plant more garlic!

Small Fruits & Berries

Raspberries *Rubus* spp. We love raspberries: fresh or frozen, in smoothies, jam and especially pie. We even like the foliage—best taken from the first-year primocanes—which makes a delicious and healthful tea. A leaf and fruit vinegar is very high in minerals, and the leaf tea makes a great astringent and tasty tonic. The root bark is also medicinal. Native to North America, Europe and Asia, they are usually identified as *R. idaeus* or *R. i.* var. *strigosus*. 53 different *Rubus* species and subspecies live in Maine.

A second variety is not needed for pollination.

Please note: Raspberries have very fine, fibrous roots. Often they do not sprout from the plant stem after planting. This is OK. Be patient! Keep them well watered and they should all break dormancy, sprout from the roots and thrive for many years to come. All of our raspberry canes are well rooted, bare root and certified virus-free.

Everbearing Raspberries bear on first-year canes (primocanes). Everbearing types are particularly desirable for northern growers because they can die (or be cut) to the ground and still produce a sizable crop the following year. In central Maine the first of these ripens in mid-late August.

Anne Late. JEF-b1 (Amity x Glen Garry) U of MD, 1998. Everbearing sweet flavorful pale yellow raspberry ripens in fall. Large cohesive conic fruit stores decently, is firmer than other yellows. Semi-vertical canes may sucker less than most everbearing types. Cut it entirely to the ground after the season is over. Resistant to phytophthora root rot. Z4.

341A Anne Raspberry, bundle of 10, $29.50

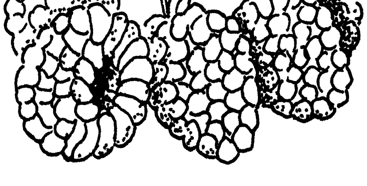
How Lisa and Aina met the Raspberry King!

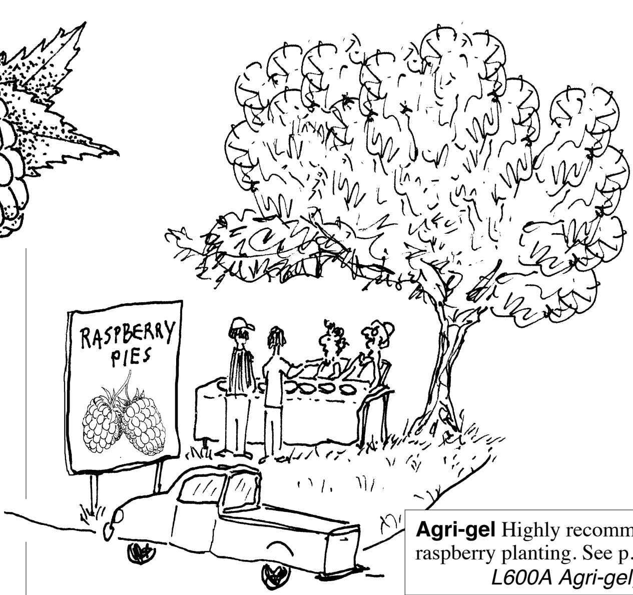
August Red Late. NH R7 [Durham x NH 102 (dwarf F2 seedling x Taylor)] x NY 287 [NY 18810 (Marcy x Indian Summer) x NY 20990 (*R. strigosus* selection)] Developed by EM Meader, UNH, 1973. Considered the hardiest of the everbearing types—the last hope when no other raspberry will survive. Medium-large crimson fruit has excellent flavor. Compact 3' bush bears earlier than other everbearers, even Polana. Productive midsummer, about Aug. 10 in central Maine. We are very pleased to offer this rare variety, bred by Elwyn Meader. Z3. **ME Grown.**

342A August Red Raspberry, bundle of 5, $29.50

Polana Late. Heritage x Zeva Herbsternte. Res Inst of Pomology and Floriculture, Brzezna, Poland, 1991. Very early fruiting everbearing red raspberry has performed very well in our Fedco trials. Large firm berries with very good flavor on vigorous and productive short canes. Ripens in late August or early September in northern districts. According to David Handley of UMaine, "as near a thing to a sure bet." Easy to pick: the berries hang off the tops of the plants. Suckers freely. Z4.

343A Polana Raspberry, bundle of 10, $29.50





Agri-gel Highly recommended for raspberry planting. See p. 33.

L600A Agri-gel, $3.00

Summer-bearing Raspberries bear on second-year canes (floricanes). Midseason berries ripen around late July in central Maine.

Boyne Early-Mid. Chief x Indian Summer. Morden Res Stn, Manitoba, Canada, 1960. Round-conic medium-sized berries with an intense deep dark almost purple color. Strong aromatic tart raspberry flavor and a perfect medium-soft texture. Grower John Meader speaks glowingly of Boyne, calling it "an excellent, excellent variety. Boyne is the one to beat if you're going to introduce a new raspberry." Leaves tend to curl down over the fruit making it harder to pick if you're in a hurry. According to friends who make honey and fruit butters, there is no better raspberry for processing. Disease resistant. Extremely hardy. Z3.

344A Boyne Raspberry, bundle of 10, $29.50

Latham Mid. MN4 (King x Loudon) U Minn, 1920. A standard raspberry for almost a century, extremely popular and widely grown. Large bright red 1" fruit is roundish, firm, a little crumbly and sprightly sweet, full-flavored and aromatic. Great for fresh eating, canning, freezing, jam, juice or pie. Ripens over an extended season making it an ideal candidate for the home garden. Canes are 4–5' tall and highly productive. Not as spiny as most raspberries. Widely adaptable and very winter hardy. Disease resistant. Z3.

345A Latham Raspberry, bundle of 10, $29.50

Nova Mid. Southland x Boyne. Kentville, Nova Scotia, Canada, 1981. In our trials Nova appears as hardy, if not hardier, than Boyne with equally amazing fruit quality. Medium-sized firm somewhat acid bright red fruit. Upright productive minimally spiny canes produce long fruiting laterals that make berries easy to pick. Z3.

346A Nova Raspberry, bundle of 10, $29.50

Royalty Purple Mid. [(Cumberland x Newburgh) x (Newburgh x Indian Summer)] NY Stn, 1982. Their distinctive flavor is different from the red raspberries, with a hint of black raspberry. A favorite for fresh eating among those who know it. Cohesive fairly firm large berries make outstanding jam and jelly, too. Extremely robust minimally suckering plants are very productive and open-formed; the berries are eye-level and easy to pick. Ready to harvest when they are deep purple, somewhat later than the reds. Plant in hills (see sidebar). Disease resistant. Usually considered Zone 4 but is proving itself into Zone 3 with occasional slight tip dieback. Z3/4.

347A Royalty Purple Raspberry, bundle of 5, $29.50

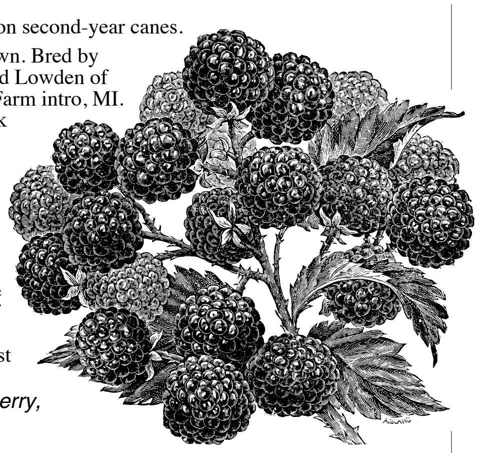
BEST ON EARTH

Top-Quality Orchard and Horticultural Supplies Available Year-round!

Come pick up supplies at our **Organic Growers Supply** warehouse on the Bellsqueeze Road in Clinton, ME, or order online at **fedcoseeds.com/ogs** or through our paper Seed catalog to have these orchard essentials shipped to you. We've expanded our selection to cover your orcharding needs.

Both Organic Growers Supply and Fedco Seeds warehouses are now open Tuesday, Wednesday and Thursday from 9 to 3 year-round. (Holidays and rare exceptions noted on our website.)

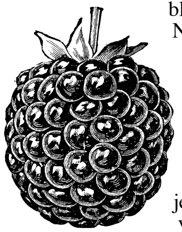
Black Raspberries bear on second-year canes.



Mac Late. Parentage unknown. Bred by Canadian bramble breeder Ed Lowden of Ontario. Makielski's Berry Farm intro, MI. Among the latest of the black raspberries, Mac is a season extender that ripens about a week or more after Jewel. Medium-large flavorful juicy berries have a firm cohesive texture. Upright productive canes benefit from trellising. May produce September fruit at the tips of unpruned first-year canes in warmer areas. This is our first year offering Mac. Z4/5.

348A Mac Black Raspberry, bundle of 5, $29.50

Blackberries bear on second-year canes.



Nelson Midsummer. Nelson has been surviving Maine winters for at least a century. Introduced to us by the descendants of Nelson Fronk, whose 1928 family photograph taken on their farm northeast of Farmington shows the blackberries growing next to the barn. John Meader grows Nelson and calls it "exceptionally hardy," one of the most enduring blackberries he has ever grown. Tall sturdy upright inch-thick canes can be grown on posts but also do well free standing. Fruit is moderately large and quite juicy with true blackberry taste. Highly productive: 16–18 blossoms on the central stalk is the most John has ever seen on any blackberry. He gets four good pickings from his patch over two weeks in mid-August. Excellent jelly and good fresh eating. Disease resistant and certified virus-free plugs. Like all blackberries, spreads quickly so give it room. Z4, maybe Zone 3. (well-rooted plugs)

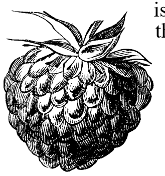
350A Nelson Blackberry, bundle of 5, $29.50

Raspberries and Blackberries

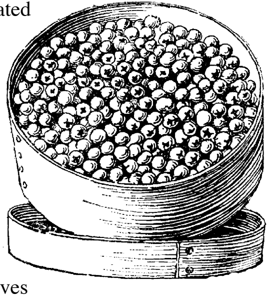
Cane fruits have shallow perennial roots. They prefer full sun, good air circulation and well-drained soil rich in organic matter. Avoid soils where tomatoes, peppers, potatoes, strawberries or wild brambles have grown. A well-kept patch can last 10–20 years.

Prepare planting holes by adding composted manure (15 bushels dry or 10 bushels fresh per 100 sq ft) and make each large enough to spread out the roots. Do not allow the fine roots to dry out. We suggest soaking roots in Agri-gel (**L600A**, see page 33) for 1–2 hours before planting. Plant 1–2" deeper than the nursery line. Mulch with a thick layer of woodchips. Fertilize liberally each spring with up to 100 lbs manure or compost, 8 lbs bloodmeal or 14 lbs soybean meal per 100 foot row. Some sources recommend additional nitrogen feeding each June and August. Plants require 2" water per week during the growing season.

- **Everbearing raspberries**: Plant 9–15" apart. Because everbearing types bear fruit on first-year and second-year canes, you have a couple of options. In warmer districts, you can leave the first-year canes to overwinter after they fruit. The following year, you will get a light crop in early summer from those now two-year-old canes, followed by a larger crop later from the new first-year canes. In colder areas generally you would cut all canes to the ground in late fall after the leaves drop, or in early spring; new first-year canes will fruit in mid-late summer.
- **Summer-bearing raspberries**: To make a hedgerow, trellis between two wires about 3–4' off the ground and 18–36" apart. Space plants 2' apart. After harvest, prune to the ground the canes that carried fruit (or remove them the following spring). Thin the fresh first-year canes to about 3–4" apart. They will bear fruit next year. During the growing season cut back canes to 5' if they are bending over severely.
- **Purple and black raspberries** and **blackberries**: Plant in hills 3–4' apart, 3–4 plants per hill. Tie to a center post for support, if needed. Basic pruning is the same as summer-bearing raspberries. As they fill in, thin to 5–8 canes per hill. During the early summer, pinch back tip of first year canes to 2½–3' tall. This will encourage lateral fruiting branches. You may run a wire between hills for lateral branching but this is not necessary. In the following spring, cut these fruiting laterals back to 8–12 buds.



Lowbush Blueberry *Vaccinium angustifolium* 6-24" and spreading. Blueberry growers in Maine usually don't bother with the "lowbush" distinction; to them, this is the only true blueberry. Folks from away may know these berries from the grocery freezer, labeled Maine Wild Blueberries. Though plants and berries are diminutive, the taste is supreme. Lustrous blue-green medicinal foliage is good in teas and turns an amazing combination of bronze, orange and scarlet in the fall. Growing in blueberries are still a local favorite and cultivated on thousands of acres.



To speed harvesting, berries are usually raked rather than hand-picked. You comb the rake a bit into the bushes (but not deeply so!), tilt it back and the berries pop off and roll into the pan. As the saying goes, "the lighter the hand, the more berries in the pan." You will also inevitably accumulate small twigs and leaves and various other odds and ends. Best raking is done on a breezy day. Lift the rake above your pail (we use a 5 gallon bucket) and pour. Ideally the berries will stream into the bucket while the twigs and leaves flutter off in the wind. Native to northeastern U.S. Spreads by seed and rhizomes. Transplants will gradually form colonies but can be slow to get established. Z2. **ME Grown.**

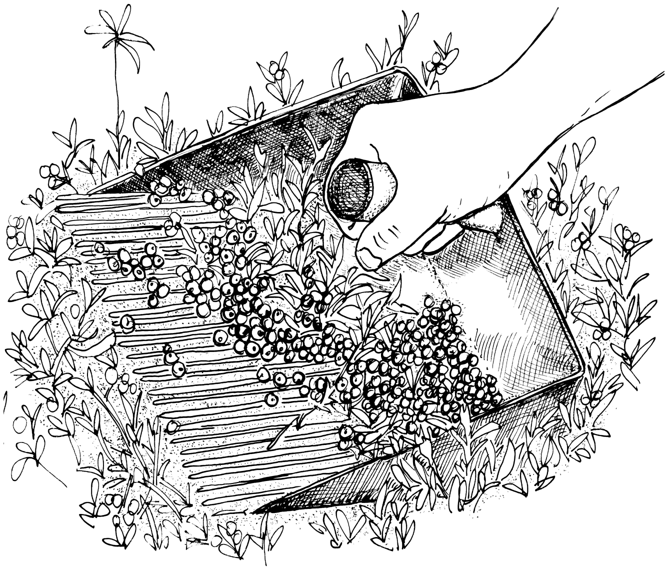
Lowbush Blueberry Sod Squares 6x6" sods from blueberry fields of Ewing Fruit Co. in Warren, ME.

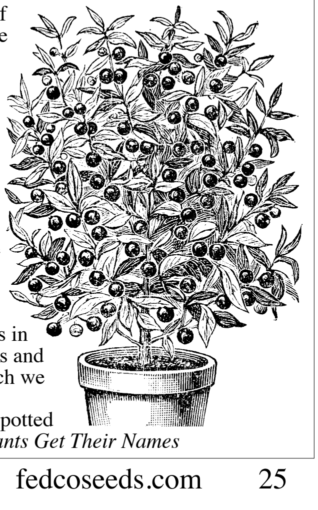
353A Lowbush Blueberry Sod, $15.75

353B Lowbush Blueberry Sod, bundle of 5, $68.75

Lowbush Blueberries

Woodsy dry poor acid soil (pH 4.0–5.2) is a prerequisite for lowbush blueberries. If you've got white pine, you're probably all set. Plant 12" apart each way and cultivate as a groundcover. **Generally self-pollinating**; other blueberries nearby will help ensure pollination. Full sun is best for maximum fruit production. Keep your patch weed free, and keep it watered while it's getting established.





How and why this plant made itself out of the inert soil and the transparent air I have no way of knowing. It might not be difficult to understand the main physiological processes, but that would not answer the questions; we could talk learnedly about heredity and yet not know why it bears orange berries rather than purple, and trough-like leaves rather than flat ones. I do not know why that seed knew how to produce this plant and not a tomato plant, utilizing the same soil and water and atmosphere and sunlight in which, in this same spot, a tomato might have made itself. Yet I accept the plant for all that…A mystery is in it that does not pertain to books and tables and deft utensils, an other-worldliness at which we would marvel were it not so familiar.

–Liberty Hyde Bailey, writing about a potted Jerusalem Cherry on his table in *How Plants Get Their Names*

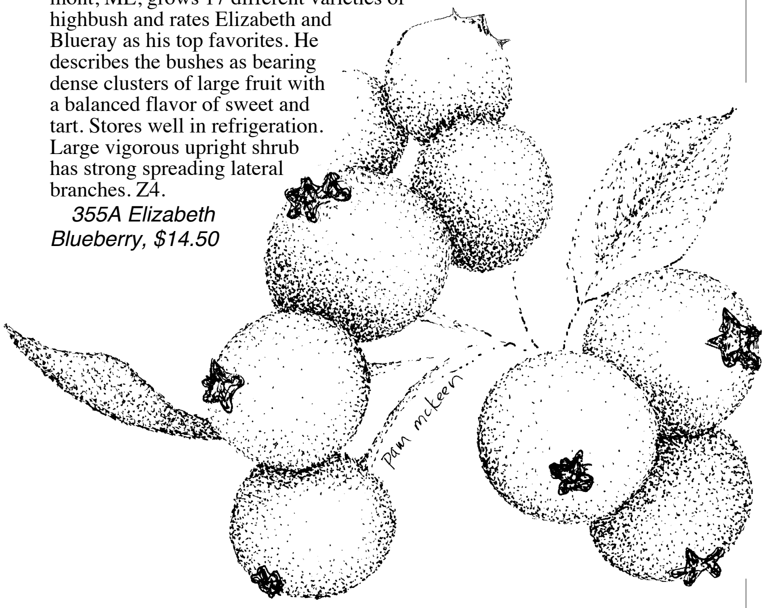
Highbush Blueberries *Vaccinium corymbosum* are native to North America. Many of Maine's lakes are lined with massive stands of highbush blueberries. Grazing the shore requires only time and a suitable vessel; we prefer kayak or canoe. The beautiful vigorous shrubs are extremely easy to grow at home, productive and reliable. By planting several varieties, you can harvest berries from early July through most of August. Bears first crop 3–5 years after planting. Productive for at least 20 or 30 years. Berries may turn blue before they reach their peak flavor. Leave them on the bush until they are fully ripe. Check a few before you pick them all! **Two varieties are required, three or more recommended, for pollination**. (1-2' transplants)

Blueray Early-Mid. 4-6' (GM 37 x CU-5) USDA, NJ, 1955. Large firm dark blue berries of high dessert quality in small clusters. Considered the best-tasting by nearly everyone who grows highbush blueberries. Very vigorous bush with upright spreading habit. Consistently productive. Z4.

354A Blueray Blueberry, $14.50

Elizabeth Mid-Late. 5-6'. Discovered by Elizabeth White, Whitesbog, NJ, and released in 1966. Friend and avid fruit grower Dan Kennedy of Searsmont, ME, grows 17 different varieties of highbush and rates Elizabeth and Blueray as his top favorites. He describes the bushes as bearing dense clusters of large fruit with a balanced flavor of sweet and tart. Stores well in refrigeration. Large vigorous upright shrub has strong spreading lateral branches. Z4.

355A Elizabeth Blueberry, $14.50



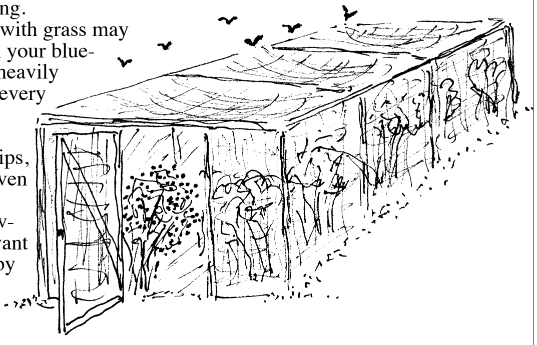
Highbush Blueberries are shallow-rooted and like light acid soil (pH 4.0–5.2) with plenty of organic matter, good drainage, and plenty of water. Space them 3–6' apart (3' for the shorter varieties) in rows 8–10' apart. If your soil is lacking acidity, add peat, woods humus, or 1 cup elemental sulfur per bush.

Dig a hole at least twice the size of the root ball. If you use peat, soak it and then mix it with soil at a one-to-one ratio. Plant at the same depth as in the nursery. Do not let the roots dry out! Pack the soil firmly and water thoroughly. Plants require at least 1" water per week during the growing season. On most soils, blueberries require regular applications of nitrogen. In the spring, apply a high-nitrogen fertilizer, such as $^{1}/_{2}$–1 qt composted hen manure per plant.

Fruit is produced on vigorous one-year shoots off healthy canes. As canes age they become twiggy and less productive. Begin pruning after three years. Head back long pieces of new growth for a bushier plant. Cut out weak or dead canes and dead tips. Each bush should be allowed to grow 6–10 canes varying in age from 1–6 years old. Thereafter, remove dead canes and those over 6 years old to encourage new replacement canes. Bushes with regular moderate pruning produce the most berries.

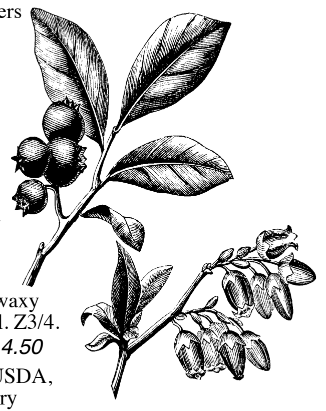
Berries may need net protection from birds. One of the best arrangements we've seen is John Meader's netted "house" in Buckfield. He has about 40 bushes growing under a framework made of posts and 2x4s and completely covered in netting.

Competition with grass may weaken and kill your blueberries. Mulch heavily (3–6" or more) every year with pine needles, cardboard, wood chips, hay, sawdust, even old slab wood. When using sawdust you may want to compensate by adding extra nitrogen.



Elliott Very Late. 4-6'. Burlington x [Dixi x (Jersey x Pioneer)] USDA, 1974. A real season-extender. Considered the latest of all varieties, Elliott ripens two weeks after Jersey. Loose clusters of medium-sized very firm mild-flavored light blue berries. Slightly spreading somewhat bushy upright plant is highly productive every year, in part because it blooms late and escapes spring frosts. Z4.

356A Elliott Blueberry, $14.50



Friendship Mid-Late. 3-4'. U of WI, 1990. Open-pollinated seedling found in an isolated stand of *V. corymbosum* and *V. angustifolium* near Friendship, WI. Lowbush-highbush type selected for hardiness and sweet wild blueberry flavor. Small-medium berries are dark blue with waxy bloom. Attractive foliage in spring and fall. Z3/4.

357A Friendship Blueberry, $14.50

Jersey Mid-Late. 5-7'. Rubel x Grover. USDA, 1928. The beloved old standard of blueberry introductions to which new varieties are compared. Medium-to-large dark blue berries in large loose clusters. Vigorous erect hardy bush. Productive, adapted to a wide range of soils, highly praised, easy to grow and suited to the New England climate. Z4.

358A Jersey Blueberry, $14.50

Meader Early-Mid. 5-7'. Elwyn Meader intro, U of NH Ag Exp Stn, Durham, NH, 1971. Medium-large medium-blue fruit with excellent flavor. Sweet with a hint of acid. Vigorous upright open lightly spreading form. Very hardy. Z4 or even Z3.

359A Meader Blueberry, $14.50

Northland Early. 4-5' x 3-4'. Berkeley x 19-H. MI St U, 1967. Highbush-lowbush type bears long loose clusters of medium-small dark blue berries with excellent wild flavor. Very vigorous and productive, 3' moderately spreading bush has limber branches that tolerate snow well. Good for landscaping, bird forage and dessert. Hardy. Z3.

360A Northland Blueberry, $14.50

Patriot Early-Mid. 4'. US3 (Dixi x Michigan LB-1) x Earliblue (Stanley x Weymouth) U Maine, 1976. Partial lowbush parentage. Adaptable to many soil types. Productive berry will fill your super bowl *every* year! Large firm berries with excellent flavor. Upright open spreading bush. Tolerant or resistant to some strains of soil fungus. Hardy. Z3.

361A Patriot Blueberry, $14.50

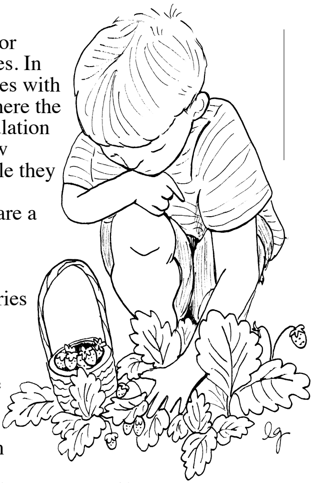
Polaris Early-Mid. 4x4' MN408 [(G-65 x Ashworth) x Bluetta] U Minn, 1996. Aromatic light blue medium-sized fruit is very firm with a strong tangy sweet flavor. Smaller slightly spreading shrub. A good choice where space is limited. Very hardy. Z3.

362A Polaris Blueberry, $14.50

Rubel Mid. 5-7' Wild strain discovered by Elizabeth White, Whitesbog, NJ, early 1900s. Small firm light blue tart berries are ideal for processing, baking into pies and muffins, or fresh eating. White asked local townspeople to find 100 of the largest fruiting bushes—the best ones she named after those who found them. Rubel is named for Rube Leek—White dropped the "-eek" because it "savored of onions." A hundred years later this variety is still being cultivated, with research showing it to be one of the highest in antioxidants for all highbush types. Parent of the old favorite Jersey. Consistent producer. Z4.

363A Rubel Blueberry, $14.50

> I have no objection to giving the names of some naturalists, men of flowers, to plants, if by their lives they have identified themselves with them.... But it must be done very sparingly, or rather, discriminatingly, and no man's name be used who has not been such a lover of flowers that the flowers themselves may be supposed thus to reciprocate his love.
>
> –Henry David Thoreau, Aug. 31, 1851



Strawberries *Fragaria* x *ananassa* A major highlight of every summer is picking strawberries. In central Maine strawberry season usually coincides with the summer solstice. Although no one knows where the common name *strawberry* originated, idle speculation is that it comes from the practice of putting straw down between the rows for pickers to sit on while they sample the fruit and catch up with each other.

Modern strawberries, developed about 1830, are a hybrid of *F. chiloensis* (native of Chile) and *F. virginiana* (native of North America). Royce Bringhurst of the University of California-Davis developed day-neutral, or everbearing, strawberries from wild plants found in Utah's Wasatch Mountains. He crossed these with modern commercial varieties and introduced the first everbearers in 1980. Everbearing plants produce berries from June to October their first year of growth. June-bearing plants produce their second year. See sidebar for cultural information about these two types.

50 plants will plant from 50–100'. (virus-free bare-root stock)

AC Wendy Early. K98-6 (K96-5 x Evangeline) Kentville, Nova Scotia, Canada, 2006. Large firm conical berries are great in the backyard garden or as an early-season berry for market. More flavorful than Annapolis and maintains size. Vigorous high-yielding plants send out lots of runners. Resistant to red stele though somewhat susceptible to verticillium wilt. Very hardy; showing excellent results in Northeast trials. **PPA**. Z3.

L366A AC Wendy Strawberry, bundle of 50, $21.00

Albion CN220 (Diamante x Cal 94.16-1) UC Davis, 2006. **Everbearing** strawberry with very large conical firm fruit, excellent flavor and good shelf life. High yielding though requires more water and nutrients than other everbearers. Fedco's Alice Percy switched to Albion from Seascape and never looked back. She says, "The best Seascape will have better flavor than the best Albion, but Albion is definitely no slouch for flavor. It continues to bear reliably and produce large delicious berries in hot weather, when Seascape will stop producing, button up, or become bitter." Plants are large and need extra space to produce bigger berries. Resistant to verticillium wilt, phytophthora crown rot, and anthracnose crown rot. **PPA**. Z4.

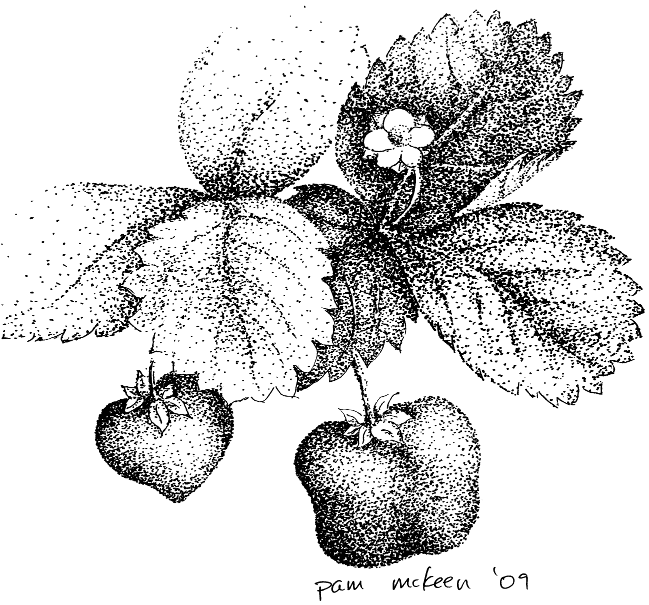
L367A Albion Strawberry, bundle of 50, $21.00

Honeoye Early-Mid. NY 1409 (Vibrant x Holiday) NY Station, 1979. Folks pronounce it *honey-eye*. Tough, hardy, vigorous, extremely productive and easy to grow. The freezer-filler of the strawberry patch. Produces large conic bright red fruit over a long fruiting season. Firm flesh with tart—and surprisingly good—flavor. Excellent freezing quality. A week before Jewel. Probably the most popular commercial berry in the Northeast. Plant in well-drained soil to avoid red stele. Susceptible to verticillium wilt. Z3/4.

L368A Honeoye Strawberry, bundle of 50, $21.00

Jewel Mid-Late. NY 1324 [(Senga Sengana x NY E-58) x Holiday] NY Stn, 1985. Shaun Keenan of Sand Hill Farm suggested we add Jewel to our list; he even went so far as to say that Jewel tastes almost as good as Sparkle. Although we don't think we'd go quite that far, we were very impressed with the berry. Large shiny red perfectly shaped fruit is firm, sweet and slightly aromatic. Unlike Sparkle, Earliglow and many other varieties, Jewel keeps its size all season. Extremely popular with commercial growers and Gene's favorite. Good freezing quality. Low incidence of fruit rots and foliar diseases. Not resistant to verticillium or red stele. Z4.

L369A Jewel Strawberry, bundle of 50, $21.00



Mara des Bois (Gento x Osara) x (Red Gauntlet x Korona) Hybridized by Jacques Marionett, Soings-en-Sologne, France, 1991. **Everbearing** strawberry claimed to be the most flavorful and fragrant of the day neutrals, often referred to as "gourmet." Berries are high in methyl anthranilate, the volatile compound that gives them their strong fragrance. Commercially grown in France where they are sold at a premium. Shorter shelf life makes them better suited for local markets. Plants bear medium-small glossy red berries prolifically from summer into fall the first year. Second year bears a heavy spring crop with continuously ripening berries throughout the summer. Z4.

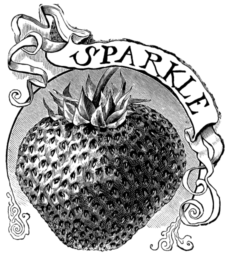
L370A Mara des Bois Strawberry, bundle of 50, $21.00

Seascape CN 49. Developed by Royce Bringhurst, UC Davis, 1991. **Everbearing** strawberry with bright red medium-to-long conic high-yielding firm productive reliable fruit. Excellent flavor. Broad resistance to fungal diseases. Somewhat susceptible to common leaf spot and two-spotted spider mite. Very hardy. Z3.

L371A Seascape Strawberry, bundle of 50, $21.00

Sparkle Mid-Late. Fairfax x Aberdeen. NJ Ag Exp Stn, 1942. Although not a favorite with commercial growers because of moderate crop size and smaller berries, we've yet to taste a strawberry that comes even remotely close to Sparkle. They possess a flavor that can only be described as the essence of strawberry. The best in an early year, the best in a late year, the best this year, last year, every year. Soft berries make delicious fresh eating and are also excellent for jams and freezing. One of its few drawbacks is that it tends to lose color in the freezer. First fruit set is large; the rest are small. Resistant to most strains of red stele. Blooms late, rarely affected by spring frost. Z3.

L372A Sparkle Strawberry, bundle of 50, $21.00

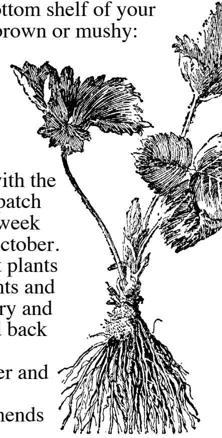


Strawberries

Keep plants cold or refrigerate between arrival and planting. We ship with roots slightly on the dry side. If you cannot plant them for a while, uncover the roots, mist them with water and re-cover, leaving tops exposed. Place bundle in paper bag and store on the bottom shelf of your fridge. Don't be alarmed if the tops become brown or mushy: they will generate new leaves.

Strawberries require good air drainage, well-drained fertile soil with pH of 5.8–6.2, thick mulch and full sun. Avoid soils where tomatoes, peppers or potatoes have grown in the past 4 years. Plant strawberries at the same depth as they were in the nursery, with the middle of the crown at soil level. Keep your patch free of weeds. They require ¾–1" water per week during April, May, August, September and October. Mulch with hay or straw in late fall to protect plants over winter. In the spring, pull mulch off plants and place between rows where it will keep fruit dry and clean during the summer. It can also be raked back over the plants if frost threatens flower buds. Floating rowcover may also be used for winter and frost protection.

The 1895 Green's Nursery catalog recommends setting out strawberry plants in the evening. "Carrying plants about the fields in the glaring sun in the heat of the day, is a trying ordeal. If planted in the evening, the dews immediately fall upon plants and give opportunity for recuperation before the next morning's sun appears." We think this is good advice for all plants.


Strawberry plant ready for setting.

June-Bearing Strawberries

Matted Row system: Set plants 12–24" apart in rows 3' apart. Allow plants to produce runners freely and fill in the row. Remove all flowers the first year. Harvest berries the second summer. Immediately after harvest, fertilize liberally with compost or aged manure and renovate the row. By hand or with a tiller, narrow the row to 12" wide. Thin plants to 4–5" apart within the row. By this method a bed can last about 5 years. Then plow it under and start again.

Everbearing or Day-Neutral Strawberries

These plants flower regardless of day length as long as temperatures are between 35 and 85°, and produce fruit from June to October. They are also uncommonly productive—about 1 lb of fruit per plant the first year, and slightly less the second year. Productivity peaks in August the first year. The second year, berry size decreases in the hottest weather and increases in cooler weather.

They are heavy feeders and benefit from 3–4" of manure worked 4–6" into the soil prior to planting. Plant 6–12" apart. Mulch with black plastic or thick straw immediately after planting. Remove flowers for the first 6 weeks, and remove all runners the first season. Mulch in late fall. Sidedress with manure monthly during the second season beginning in May. Till under after the second year and begin again.

Grapes *Vitis* spp. Grapes are easy to grow and can bear plentifully even in northern New England. They begin fruiting in the second or third year after planting. They are rugged and cold hardy. Our vines bear consistently every year. Although many people prefer seedless types for table use, seeded varieties can be quite enjoyable right off the vine if you don't mind "grape nuts." Grape seeds contain an antioxidant that is twice as powerful as vitamin C.

The popularity of drinking wine is not new. The Chinese were fermenting it from hawthorn berries nearly 12,000 years ago. The first wine from grapes was likely made in Turkey or Iran 7000 years ago. Traces of red wine were found in the tomb of the Egyptian pharaoh Tutankhamen. Resveratrol is the polyphenol at the center of the red wine hoopla. It appears to have anti-carcinogenic and anti-inflammatory properties as well as anti-microbial agents that work to prevent heart disease. Red wine is good for you!

Most grape varieties are bred from a combination of different species, *V. labrusca* and *V. vinifera* being the most important. *Labrusca* is native to the eastern U.S., has a wild tart musky (foxy) flavor, and is hardy and disease resistant. Concord is the best-known of the *labruscas*. *Vinifera*, native to Europe, is extremely high quality, and is the most important wine grape in the world, but is not cold hardy and is prone to disease. *V. riparia,* used as rootstock for grafted varieties and in hybridization with *vinifera*, is very adaptable to a wide range of soils, disease resistant and very cold-hardy.

In central Maine, "very early" grapes begin ripening in mid-August, while "midseason" ripen mid-September. Late-season Concord, a standard elsewhere, does not ripen in many northern areas. **Grapes do not require a second cultivar for pollination.** (well-rooted vines)

Bluebell Mid. MN 158 (Beta x unknown) Developed by JM Dorsey, U Minn, 1944. Our most popular seeded grape; it does everything well. Extremely hardy, to –30°, *labrusca* type ripens 2–3 weeks earlier than Concord. While it ripens beautifully from central Maine south, it may not have time to ripen in some northernmost locales. Delicious sweet flavor makes them excellent for fresh eating, jelly and juice. Clusters of medium-sized dark berries with a heavy blue bloom. Strong, productive, vigorous—but not rampant—vine. A joy to grow. Immune to most or all fungal diseases. Z3.

374A Bluebell Grape, $15.00

Edelweiss Mid. MN78 [(Beta x Witt) x Ontario] Elmer Swenson intro, U Minn, 1980. Considered one of Swenson's favorite grapes. Sweet green slip-skin with a white bloom. Good for fresh eating and also makes a nice fruity wine. Large conical loosely formed clusters of medium-size tender juicy berries. Slightly foxy. High sugar content. Harvest when mature—if you leave them on the vine too long, the flavor strengthens and becomes musky. Vigorous and productive. Disease resistant. Hardy to –30° or –35°. Z3.

375A Edelweiss Grape, $15.00

Frontenac Mid-Late. MN 1047 (*V. r.* RIP 89 x Landot 4511) U Minn, 1996. A highly praised cold-hardy red-wine grape, also excellent for fresh eating. Recommended for dry full-bodied Merlot- or Bordeaux-style table wines, rosés and ports. Very large loose clusters of small berries. Intense juice color, low tannins, high sugar and high acid content. In *Notes from the North*, John Marshall adds, "Though the sugar may rise to impressive levels early in September, the grapes are not nearly ripe. Ignore the sugar levels and wait until September 20. The acid will drop and the wonderful black-cherry flavors that will make this grape famous will multiply." Vigorous productive disease-resistant vines. Z4/5.

376A Frontenac Grape, $15.00

King of the North Mid. (*V. riparia* x Concord-type) Madison, WI. Very hardy dark-skinned table and wine grape originally named and offered by Jung's Nursery many years ago. Minnesota grower and winemaker John Marshall recommends King of the North as the one variety for both a good table grape and a decent red "Concord style" wine. He says that it's "very delicious particularly as a home wine." Produces light red sweet tasty juice. Ripens slightly later than Bluebell. Z3.

377A King of the North Grape, $15.00

Marquette Mid-Late. MN 1211 (MN 1094 x Rivat 262) U Minn, 2006. This grape has northern winemakers buzzing with excitement. The best variety this side of the Atlantic for a Pinot-Noir–style red wine. One parent, MN 1094, has both *V. riparia* and *V. vinifera* in its background. The other, Rivat 262, is a French hybrid with Pinot Noir as one of its parents. Not only is Marquette heavy with *vinifera*, the vines are also extremely cold-hardy. And there's more: sugar levels are high—in the range of 26.1 Brix—and the acid levels are lower than Frontenac. Substantial tannins add complexity. Small-medium bluish-black berries in small to medium-sized clusters. Ripens a few days before Frontenac. **PPA**. Z3.

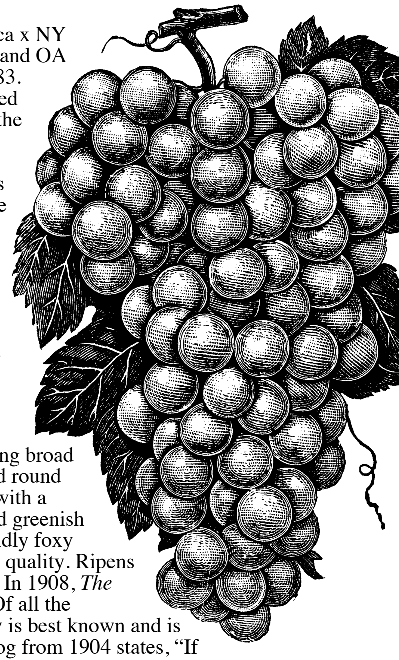
378A Marquette Grape, $15.00

Reliance Seedless Very Early. Arkansas 1163 (Ontario x Suffolk Red) AR Stn, 1982. Good for fresh eating or juice. Large loose clusters of tender melting sweet pinkish-red fruit with a strawberry-like flavor. Stores well in a root cellar for 1–2 months. Seems hardy although it has shown significant dieback in our Zone 4 trials. You may need to lay vines down for the winter in colder areas (see sidebar). While the literature cautions about Reliance's disease susceptibility, our vines have performed well and remained free of disease. Z4/5.

379A Reliance Seedless Grape, $15.00

Somerset Seedless Early. ES12-7-98 (ES5-3-64 x Petite Jewel) Swenson intro. Somerset is likely one of the hardiest seedless grapes available today. One of the last Swenson introductions before the renowned and beloved grape breeder passed away in December 2004. Medium-sized loose clusters with small sweet ruddy reddish-golden fruit. Crispy texture and great flavor. Easy to grow but not overly vigorous. Z4.

380A Somerset Seedless Grape, $15.00



Vanessa Seedless Mid. Seneca x NY 45910. Introduced by KH Fisher and OA Bradt, Vineland Stn, Ontario, 1983. Large bright firm seedless deep red grapes with a fruity flavor make the absolute best raisins we've ever eaten. Excellent fresh eating. Medium-sized well-filled clusters on vigorous vines. Ours had some dieback at –20° but they all re-sprouted from the base and grew back to where they left off the previous summer. Going strong in our central Maine vineyards. Z4/5.

381A Vanessa Seedless Grape, $15.00

Worden Mid. *V. labrusca*. Concord seedling. Minetto, NY, 1863. Heirloom variety. Large long broad tapering clusters of medium-sized round dark purplish blue-black berries with a heavy bloom, thin tender skin and greenish translucent juicy flesh. Sweet mildly foxy flavor with excellent fresh-eating quality. Ripens 2–3 weeks earlier than its parent. In 1908, *The Grapes of New York* recorded, "Of all the offspring of Concord, this variety is best known and is most meritorious." Green's catalog from 1904 states, "If you fail to plant a Worden grape you will make a mistake." Healthy hardy vigorous productive vines. Z4.

382A Worden Grape, $15.00

Grape Collection Our pick of 4 varieties, individually labeled, a combo of hardy dessert and wine grapes.

386A Grape Collection, bundle of 4, $50.00

CR Lawn, founder of Fedco Seeds and honorary member of Fedco Trees!

Upon his retirement, June 30, 2018

On Saturday morning December 18, 1982, CR Lawn, Gene Frey and I sat down together in Waterville to discuss a proposal I'd concocted to start a new division of Fedco Seeds. It would be called Fedco Trees and would have its own catalog. They liked my idea. With CR's help, I fleshed out the plan and in September 1983 we put together the first Trees catalog: two sheets of paper stapled in the upper lefthand corner. So began Fedco Trees and a long partnership with CR.

Although for the next 35 years CR mostly remained in the background of Fedco Trees, he did play a key role. For many years I would drive out to visit him on his farm in Canaan on some warm August evening. Having spent all day working in his expansive trial gardens, he would meet me on his cabin porch and we'd create the next year's budget, writing up a list of expenses on the backsides of a couple of sheets of scrap paper. He would scribble away in pen while I answered his questions about how many rolls of pallet-wrap we'd use for bundling the trees or how many blueberries, grapes or apple trees I thought we'd sell. I'd leave well after dark with a plan.

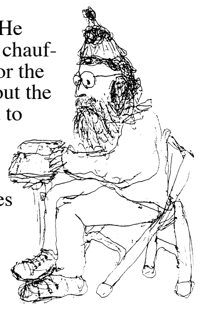
In the spring, CR always came to the Trees pick-up. As we handed out bags of trees, CR would do the paper work for every customer. More than one customer looked on in disbelief as he tallied up long columns of numbers, doing the math in his head. He rarely, if ever, made a mistake.

As Fedco Seeds grew, CR's involvement with Trees began to subside. Still, he and I would occasionally have long interesting talks, sometimes late at night when I'd come to the old office off Main St. in Waterville to pick up the mail after seeing a movie at Railroad Square. CR liked to work into the wee hours, and that was a good time to catch him. If he wasn't too busy, we'd chat about a particular finance issue or some plant research or maybe the Red Sox. Eventually he stopped coming to the spring Tree Sale. It was large by then and he wanted to get into his gardens. But he always remained deeply interested in Fedco Trees.

One year CR was asked to give a talk in Camden. He doesn't drive and he asked me to join him and be his chauffeur. It was a rare treat to have him alone in the car for the long drive to the coast. Our hosts asked us to talk about the history of Fedco Trees and Fedco Seeds. We decided to switch roles: he told the story of Fedco Trees and I told the story of Fedco Seeds. It was a delightful event. No only that, we both mostly got it right!

In recent years a younger generation of Fedco Trees leaders discovered CR and all he has to offer. As they've learned the ropes, they've also spent much time with him, just as I did decades ago. CR Lawn's name never showed up much in the Trees catalog. He never tagged a tree or pulled a Tree order. But it couldn't and wouldn't be Fedco Trees without him. Thank you, CR!

–John Bunker



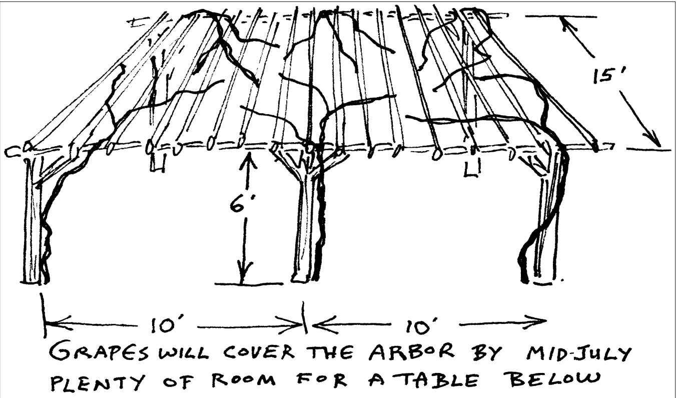
Grapes prefer soils with pH of 5.8–7.0. For the best grapes, provide moderate fertility, very well-drained soil and full sun. Every June we thoroughly weed the grapes under our arbor, then mulch very liberally with old hay. After that, we don't do a thing to them except harvest in late summer and prune in late spring. Space 8–12' apart in rows 8–12' apart.

Spread the roots out, planting the crown even with the soil surface. Do not prune roots. Pack soil well. Water and mulch well. After frost danger has passed, prune vines back to 3–5 strong buds. Continue to mulch annually with hay or straw. Every few years fertilize liberally with granite dust.

Grapes require annual pruning and a trellis or arbor, though in Italy they still sometimes grow them in maple trees. All systems for growing grapes involve removal of most growth in late spring to encourage new canes, as fruit is produced on these canes. There are many systems for training grapes. Some are suited to laying down and covering tender varieties over winter. Any good book on grape growing will show you several options. We suggest the Hudson River Umbrella or the Four-arm Kniffin system. The University of Maine offers a series of videos demonstrating different grape-training techniques. Go to: umaine.edu/highmoor/ and click on "videos."

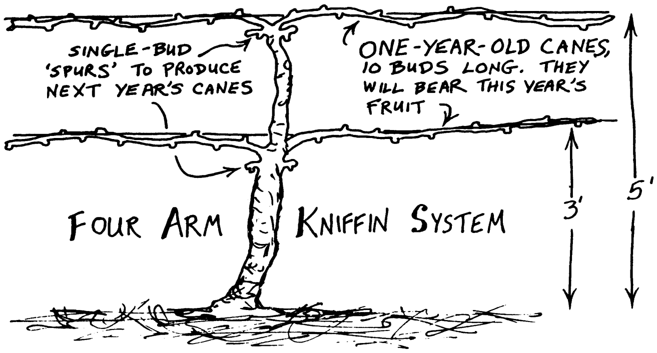
People sometimes ask about wire. The current vineyard standard is high-tensile-strength class III galvanized steel wire. The gauge should be 11 to 12.5. The wire is generally sold by weight. 100 lbs of 11 gauge measures about 2600'. 100 lbs of 12.5 measures about 3800'.

Grapes rated for Zone 5 can be grown in Zones 3 and 4. To prevent winter injury, remove the vine from the trellis in fall, lay it on the ground, and bury with just enough soil to cover. To do this, plant your new grapevine at a 45° angle. Train new shoots horizontally for at least one foot. Then, curve shoots upward to form a J shape. This creates a flexible hinge, allowing you to lay the vine down at the end of the season.


15'
6'
10'
10'
GRAPES WILL COVER THE ARBOR BY MID-JULY
PLENTY OF ROOM FOR A TABLE BELOW

Growing Grapes on an Arbor

Train one or more vines onto an arbor or gazebo; we have 8 vines, spaced about 10' apart. Prune each vine back to a single trunk. Encourage several permanent arms from each trunk. In late spring remove 70-90% of the past summer's growth. Next summer new fruiting canes will grow off the permanent arms.


SINGLE-BUD 'SPURS' TO PRODUCE NEXT YEAR'S CANES
ONE-YEAR-OLD CANES, 10 BUDS LONG. THEY WILL BEAR THIS YEAR'S FRUIT
FOUR ARM KNIFFIN SYSTEM
3'
5'

Pruning Grapes in the Four-Arm Kniffin System

First year: After the danger of frost has passed, cut newly planted vines back to a single stem, 6" long with two to three buds.

Second year: Set up two wires, 3' and 5' high, stretched between posts. Cut plant back to a single stem, 6 feet long and tie it to the top wire. Leave 4–6 buds near each wire and remove others.

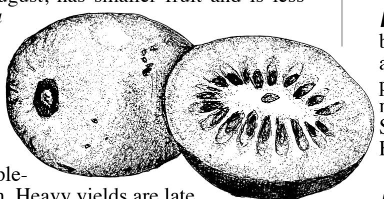
Third year: Select 8 canes, 4 for each wire, and remove the rest. Tie two canes to each wire, one in each direction. Cut these 4 canes back to 10 buds each. Cut the remaining 4 canes back to 1–2 buds each.

Later years: In late spring, remove last year's fruiting canes. Select eight new canes. Cut 4 of them to 10 buds each, and tie them to your wires. Cut the remaining 4 back to 2 buds each. These will produce next year's fruiting canes. Remove all other canes. The number of buds left on the fruiting canes may be adjusted to encourage more fruit (leave more buds) or larger size (leave fewer buds).

HARDY VINES & CREEPERS

Hardy Kiwis *Actinidia* spp. Productive twining vine climbs 20' or more and produces juicy bite-sized fruits in late summer. Though much smaller than the fuzzy supermarket kiwi, hardy kiwis are by no means lacking in flavor. Skin is smooth and edible. The longer they ripen on the vine, the sweeter they become. Easy to grow in rich well-drained soils. Will begin producing in 5–9 years. Mature plants may produce up to 100 lbs of fruit. Once vines are established, adequate pruning (see directions in sidebar) will significantly increase yields. No significant pest or disease problems.

Both male and female plants required for fruit. One male will usually pollinate at least three females of the same species. The females bear the fruit. We offer two species. *Arguta* ripens around mid-September, has larger fruit and is more vigorous than *kolomikta*. (*Argutas* can just about pull down a tree.) *Kolomikta* ripens around mid-August, has smaller fruit and is less vigorous but more cold hardy than *arguta* and should thrive even in the northern-most districts. Native to eastern Asia. (well-rooted transplants)



***A. arguta* 'Anna' Female.** Also called **Ananasnaya**. Thought to be a hardy cross between *arguta* and *kolomikta*. The Russian name describes its taste: 'pineapple-like.' Tangy and sweet with rusty red skin. Heavy yields are late to ripen, very end of September or early October. Requires Meader male for pollination. Z4.

387A Anna Female Kiwi, $14.50

***A. a.* 'Michigan State' Female.** Tom Vigue calls them "sweet and most highly luscious." A dynamic combination of sweet and sour. Although these lime-green tots may sometimes make you pucker up, the overall experience is joyous and delicious. Larger than other varieties. Requires Meader male for pollination. Z4.

388A Michigan State Female Kiwi, $14.50

***A. a.* 'Meader'** Fruitless **male** kiwi suitable for pollinating *arguta* females Anna and Michigan State. Will not pollinate *kolomiktas*. Extremely vigorous vines are often grown just for their beautiful dark green ornamental foliage accentuated by reddish-pink petioles (leaf stalks). Z4.

389A Meader Male Kiwi, $14.50

***A. kolomikta* 'Red Beauty' Female.** Fruit is sweet, skinny and small, the size of a grape. More precocious than *argutas*. Fruit falls from the vine when ripe. Medium-dark green foliage becomes showy red in autumn. Requires Arctic Beauty for pollination. Z3/4.

390A Red Beauty Female Kiwi, $14.50

***A. k.* 'Arctic Beauty'** Fruitless **male** pollinator for Red Beauty. Will not pollinate *argutas*. Often grown by itself as an ornamental for its beautiful foliage. Young leaves emerge purple, then become variegated pink, white and green, looking as though they've been dipped in paint. Heat, excessive fertilization or shade may reduce the leaf color. Z3/4.

391A Arctic Beauty Male Kiwi, $14.50

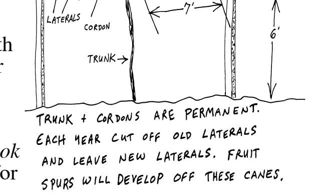
Kiwis

Kiwis are dioecious vines, meaning male and female flowers are on separate plants, so you need a male plant to pollinate the fruiting female plants. They are extremely vigorous and require a rugged trellis or arbor and heavy pruning. Plant vines 15' apart each way in moist but well-drained soil. Kiwis are adaptable and tolerate a wide range of soil types (pH 5.0–6.5). One male will pollinate several females as long as they are within approximately 30' of the male. Although the vines are quite hardy, the flowers and foliage are frost sensitive. Planting on a northern exposure will delay budding in spring and reduce risk of frost damage. Protection from winter winds and intense winter sun is also recommended. Mulch with hay or wood chips. On poor soil fertilize with compost annually.

On a trellis: Train a single trunk to the trellis wires and then train two permanent 7–10' cordons (arms) off the trunk. Each winter remove at least 70% of old growth, leaving a dozen or so one-year-old laterals. Fruit will develop on fruit spurs growing off these one-year-old canes.

On an arbor or gazebo: Once established, prune 70% of the old growth each year and leave some new canes for this year's fruiting.

Summer pruning may be required to keep extremely rampant vines from choking out your farm. *The Pruning Book* by Lee Reich is an excellent reference for pruning kiwis.



TRUNK + CORDONS ARE PERMANENT. EACH YEAR CUT OFF OLD LATERALS AND LEAVE NEW LATERALS. FRUIT SPURS WILL DEVELOP OFF THESE CANES.

Hops *Humulus lupulus* Late summer. Up to 20-30' Beautiful twining vine covers a trellis, archway or the entire side of a barn. Our favorite live awning to shade out the summer sun. Green lobed leaves, bristly stems, and insignificant greenish flowers, followed by the hops: papery aromatic cone-like strobiles used medicinally and in brewing for more than 1000 years. John Christopher recommends the strobile tea as "a powerful, stimulating and relaxing nerve tonic." For brewing, there are basically two types of hops. Aroma hops have a lower percentage of alpha acids and are used for flavoring, finishing or conditioning brews. Bitter hops have more alpha acids and are used to impart bitterness.

Tolerates shade, adapted to most well-drained soils. Dies back to the ground in fall and rebounds more vigorously each year. Plant it where you want it because the extensive root system can be hard to dig up. Native to Eurasia. Z3. (5-6" female rhizomes)

***H. l.* 'Cascade'** USDA 19124 [(Fuggle x Serebrianka-Fuggle S) x open-pollinated] OR St U, 1972. Contains 4–7% alpha acids. Fragrantly aromatic hop, low bittering value. Very productive with large cones, ready to harvest mid-late August in central Maine. A customer wrote, "Cascade has gained impeccable renown as *the* charismatic hop in such unsurpassable ales as Anchor's Liberty Ale, Sierra Nevada's Pale Ale and McNeill's Firehouse Amber Ale. Nothing 'light' about these." Resistant to downy mildew.

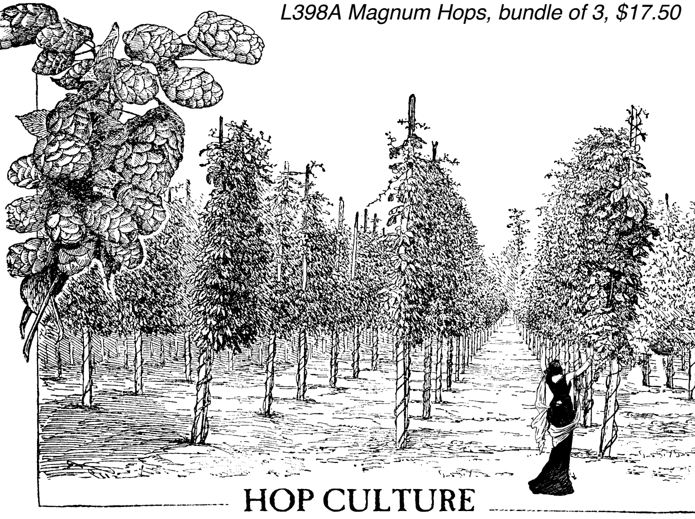
L396A Cascade Hops, bundle of 3, $17.50

***H. l.* Fuggle** Introduced 1875. Traditional old English hop thought to have been discovered as a chance seedling in 1861. Alpha content 4–5%. Earthy aroma-type medium-alpha finishing hops used for bittering and aroma in pale ales, porters and stouts. Mild and pleasant, spicy, soft, woody. By the middle of the last century, nearly 80% of British hops were Fuggle. The Slovenian "Styrian (Savinja) Golding" is either the same hop or perhaps a Fuggle selection.

L397A Fuggle Hops, bundle of 3, $17.50

***H. l.* 'Magnum'** Galena x select German male. German Hallertauer hybrid, 1980. Very high bittering with good storability. Alpha content 12–17%. Strong bitter flavor with subtle hints of spice and citrus though not generally used as an aroma hop. Known for giving a clear and distinct bitterness that is not overpowering. Used in IPAs, pale ales, stouts and lagers.

L398A Magnum Hops, bundle of 3, $17.50



Hops

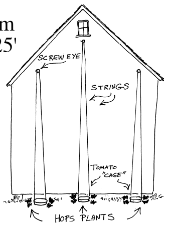
Refrigerate slightly moistened rhizomes in a plastic bag until planting. Hops prefer full sun and rich light well-drained soil with a pH of 6.5–8.0. As soon as soil can be worked in spring, till to create a weed-free area. Dig holes about 1' deep and at least 3' apart in rows. Add manure, compost and other slow-release organic fertilizers. Plant 2 rhizomes per hole, horizontally with the buds pointed up and cover with 1–2" of loose soil. The first year the hop plant requires frequent light watering and mulching.

Hops grow vertically, with lateral sidearms extending from the main vine and producing cones. Vines may grow up to 25' in a single season, and do best if they are trained onto strong twine 12–30' high, supported by a trellis, wire, pole, tree branch or south-facing building.

When the young vines are about 1' long, select the 2 or 3 most vigorous vines per hill and remove the rest. Gently wrap the vines clockwise onto a string. Once trained, the vine will guide itself.

Pick the hops when they are papery but still slightly sticky and filled with yellow powder. Harvest dates will vary with the variety and climate. Because most hops are produced out of reach from the ground, it is safest to lower the vines in order to pick the hops. Dry hops thoroughly before use. Spread on screens in a dry attic, they will dry in a few weeks. Dried hops freeze well.

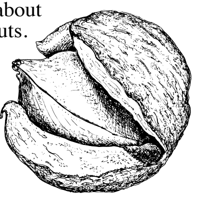
Cut the vines back to the ground after they have been killed by frost. Each spring apply a hearty topdressing of manure and compost. To help control vigor, prune roots by cutting a 2–3' circle with a shovel around the base of the plant in spring.



Nuts

The nut plants we're offering are grown from nuts harvested from the most productive specimens. Like all seedlings, each one is a little different, and nut quality may vary.

***Carya ovata* Shagbark Hickory** 60-80' or taller. One of our most beautiful native nut trees. Straight trunked with branches that curve skyward at the tips. Not only does the bark shag, it looks like huge long strips are about to fall off. After the tree reaches bearing age, about 40 years, it will shower the yard with sweet edible nuts. Those left unharvested will likely be planted by local creatures, some four legged, some two. Rich yellow fall foliage. Slow growing but very long-lived. Tough wood used for making tool handles. Prefers rich well-drained loam but adaptable. **Self-pollinating**. Native to eastern U.S. Z4. (1-3')



402A Shagbark Hickory, $15.00

***Castanea dentata* American Chestnut** Up to 100' Before 1900 American chestnut was one of the most important deciduous trees in the eastern U.S. The arrow-straight rot-resistant wood was used for everything from mine timbers to musical instruments. Delicious sweet nuts were an important food for wildlife and humans. Chestnut blight, an Asian fungus, showed up in Brooklyn in 1904; within 50 years it killed virtually every chestnut tree in the eastern U.S. The blight does not kill the roots however, and rare stands of mature trees can still be found. In July 2015, the tallest American chestnut in North America was discovered right here in Maine by researchers who spotted the profuse white blossoms from the air.

The trees we offer are not immune but were harvested from healthy trees and will likely thrive if there's no active blight nearby. Fast growing and straight trunked with a wide-branching magnificent rounded crown. Fragrant white blooms in July. Ribbed sharp-toothed lustrous dark green foliage. Yellow fall color. Prefers loamy well-drained acidic soil and full sun. **Two or more needed for pollination** but will cross-pollinate with Asian and European chestnuts. Precocious, bearing heavy crops of nuts in 10 years. From each American chestnut purchase, Fedco will donate $3 to support the American Chestnut Foundation Maine Chapter. Z4. **ME Grown.** (1-3')

403A American Chestnut, $22.50

***Corylus americana* American Hazelnut** 12-18' x 10-15' Also called **American Filbert**. Squirrels, bluejays and humans alike relish the sweet tasty ½" nuts of this multi-stemmed rounded native shrub. Usually bears 3–5 years after planting. Collect the crop as soon as the husks begin to brown and lose their sticky yellowness. In central Maine that's around the third week of September. Showy catkins in spring. Dark green serrated foliage in summer. A patchwork of reds, yellows, oranges and greens in autumn. Suckers from the roots. Excellent for naturalizing in thickets. The main pest is nut weevil, which leaves a "hit" mark on the nut shell. (Raking drops and spraying Surround may help with this.) Prefers well-drained soils; pH adaptable. Full sun or light shade. **May be self-fruitful but** for best nut sets, plant more than one, 4–6' apart. Native to U.S. Z4. **ME Grown.** (1-3')

404A American Hazelnut, $16.50

***Corylus* Hazelbert** 8-12' tall and bushy. [(*C. americana* Graham x *C. a.* Winkler) x (*C. a.* Skinner x *C. avellana*)] In the early 20th c., plant breeder Fred Ashworth crossed cold-hardy native hazelnuts with larger European filberts to produce the Hazelbert. Larger than native hazels and smaller than the commercial ones, they're as delicious as each and hardy as heck. Our 8-year-old seedlings started producing 3 years after planting and have been reliable since, ripening about a gallon of nuts per plant in very early fall. Like other hazels, they clump and sucker to form hedges. **May be self-fruitful but** for best nut sets, plant more than one. Z3/4. **ME Grown.** (1-3')

405A Hazelbert, $20.00

***Juglans nigra* Black Walnut** 70-90' A spectacular shade tree with a magnificent open rounded crown of massive limbs with dark green leaves. Harder to crack than commercial English walnuts but worth the effort for their distinct sweet earthy rich flavor. Eat them chopped on fresh salads, or with dark chocolate while sipping bourbon. Highly valued cabinet and veneer wood. Husks, leaves and roots common in herbal medicine for anti-fungal properties. Husks also yield a rich brown dye. Deep taproot. Prefers moist well-drained soils, pH 6–7. Roots give off a compound called juglone that inhibits some plants, so don't plant one too close to your garden. Space trees about 50' apart for nut production, 20' apart for lumber. May begin to bear fruit in 5–10 years. Some say multiple trees needed for pollination but we've seen enough solo trees with large nut crops to say you only need one. Native to eastern U.S. though not quite into Maine. Z4. **ME Grown.** (1-3')

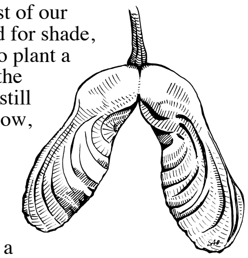
406A Black Walnut, $17.00

***J. regia* 'Carpathian' Walnut** 30-50' x 40' Species sometimes called **English Walnut** or **Persian Walnut**. Very large open somewhat vase-shaped fast-growing tree with those edible nuts you buy in the store. Traditionally used in Europe for salad oil. Has the same alternate pinnately compound foliage as black walnut but glossy blue-green leaves are larger and more rounded, almost tropical looking, and shells are a bit easier to crack. Prefers light deep dry loamy soil. Bears in 5–7 years. **Considered self-fertile but** plant two for more abundant crops. In the 1930s, this cultivar was brought to North America from the Carpathian Mountains in Poland where it was reputed to bear heavy crops even after –40° winters. Native to southeastern Europe, east to China. Z4 or maybe Z3. **ME Grown.** (1-3')

407A Carpathian Walnut, $17.00

Shade Trees

***Acer saccharum* Sugar Maple** 50-100' Largest of our native maples, also known as **Rock Maple**, valued for shade, syrup and lumber. A New England tradition was to plant a pair of sugar maples in front of the farmhouse on the inhabitants' wedding day. Those "wedding trees" still grace many Maine front yards. Famous for its yellow, gold, scarlet and crimson fall foliage and its fresh sap that's boiled down to make real maple syrup. Huge upright spreading form with light grey bark. Shade tolerant, making it easy to interplant in existing woods. Prefers moist well-drained soils. Cold hardy. Sensitive to salt and air pollution; not a good city tree. Native Quebec to Gulf Coast. Z3. (2-4')

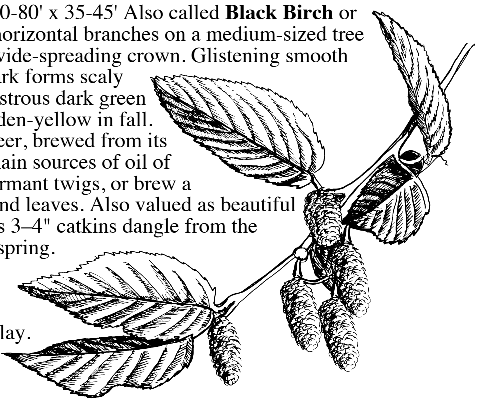


410A Sugar Maple, $18.00

Betula allegheniensis* Yellow Birch** 60-75' x 40-50' Also called ***B. lutea. The deep golden-yellow exfoliating bark glows and dazzles with a satiny sheen. Yellow birch can grow to be a grand old tree that bursts through the forest canopy, though they're often modest understory trees snuggling themselves into shady niches. Valuable timber for veneer, furniture and flooring. Traditionally used for sled runners and toboggans. John has several hand planes made of this very hard dense wood. The twigs make a wonderful tasty pink-colored tea. Rusty yellow fall foliage. Wide-branching rounded form in the open; irregular in the woods. Shade-tolerant. Adaptable but prefers moist rich well-drained acid soil. The Maine state champ (once the national champ) lives in Deer Isle: 16.6' circumference and 48' tall with a 91' crown spread. Native to eastern North America. Z3. **ME Grown.** (2-4')

411A Yellow Birch, $16.75

***B. lenta* Sweet Birch** 40-80' x 35-45' Also called **Black Birch** or **Cherry Birch**. Graceful horizontal branches on a medium-sized tree with a rounded irregular wide-spreading crown. Glistening smooth reddish-brown to black bark forms scaly plates on mature trees. Lustrous dark green foliage turns splendid golden-yellow in fall. The best birch for birch beer, brewed from its copious sap. One of the main sources of oil of wintergreen. Chew the dormant twigs, or brew a delicious tea from twigs and leaves. Also valued as beautiful furniture wood. Pendulous 3–4" catkins dangle from the shiny bronze branches in spring. Prefers deep rich moist slightly acid well-drained soils, but adapts to most conditions except heavy clay. Sun to part shade. Native to eastern U.S. Z3. **ME Grown.** (2-4')



412A Sweet Birch, $16.75

***B. nigra* River Birch** 60-80' x 40-60' With its graceful silhouette and attractive bark, river birch is a highly prized ornamental. Grows to be a very large rounded tree. Found along stream banks and riparian areas where conditions are wet in winter and spring, dry in summer and fall. Dark green summer foliage yellows before dropping. The beautiful reddish-brown exfoliating bark reveals the equally ornamental multi-shaded inner bark. Leaves, twigs and bark traditionally used to treat various stomach ailments. Birds eat the seeds and deer browse the foliage. Wood not as valuable as other birch. Prefers moist acid soil. Fast growing, trouble free. Native to eastern U.S. Z4. **ME Grown.** (2-4')

413A River Birch, $16.75

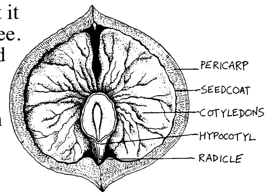
413B River Birch, bundle of 5, $72.00

***B. papyrifera* Paper Birch** 30-70' x 30' Also called **Canoe Birch** or **White Birch**. The classic birch tree. Elegant as a single- or multi-stemmed specimen. Medium-sized tree with an irregular oval shape, upright angled branches and magnificent chalk-white peeling bark. Deep green foliage produces light shade in summer and turns clear yellow in fall. Birds prize the catkins, buds and seeds. Twigs are a favorite deer browse. Bark traditionally used for building canoes, containers and roofing. When traveling in the north country, keep a small bundle of finely shredded bark in your pocket to kindle the nightly fire. Valuable wood at the sawmill. Twiggy branches, stuck into the ground, are perfect for pea fencing. Prefers moist well-drained acid soil though we've seen it thrive on ledge. Native to northern North America. Z3. **ME Grown.** (2-4')

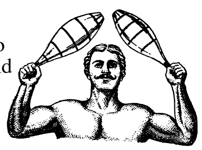
414A Paper Birch, $16.75

414B Paper Birch, bundle of 5, $72.00

In Greek mythology, Dionysus kind of lost it and turned his lover Carya into a walnut tree. Carya got off easy—her sisters were turned into rocks. **Hickory**, genus *Carya*, is part of the walnut family, *Juglandaceae*. *Juglans*, the **walnut** genus, is derived from *jovis*, referring to the god Jupiter, and *glans*, meaning 'nut,' making the walnut 'nut of the gods.'



More Shade Trees

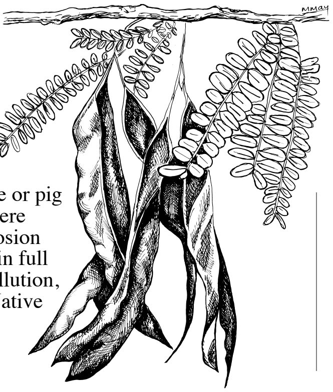


Carpinus caroliniana **Musclewood** 10-40' x same. Also known as **Blue Beech**, **American Hornbeam**, **Ironwood** and **Water Beech**. A small floodplain or understory tree with long irregular crooked branches and smooth grey ribbed bark. Alternate names each refer to one of its wonderful attributes. Musclewood refers to the sinewy ribbing of the trunk, which resembles a flexed forearm. Smooth grey bluish-tinted bark resembles beech. Ironwood because of its incredible toughness, suitable for tool handles and oxen yokes. Water beech because it can thrive in a flood plain. Bronze-red tomentose foliage in spring turns a striking blue-green color with the season. Bright red, scarlet and orange fall color all at the same time. Prefers deep rich moist slightly acid soil but will handle dry spots. Remarkably adaptable but does not like urban conditions, although the one growing next to the Farnsworth Museum in Rockland is doing well. Full sun to full shade. Native from Canada to Central America. Z2. **ME Grown.** (2-4')

415A Musclewood, $17.00

Ginkgo biloba **Ginkgo** 50-80' Also called **Maidenhair Tree**. Considered the oldest living genus of seed plants; grew in North America in the time of the dinosaurs. There are 3000-year-old specimens in China. Upright tree when young with branches that spike out and up like the rays of the sun, eventually becoming wide-spreading and graceful. Slow-growing, can be extremely long-lived. Unique fan-shaped foliage turns sparkling golden-yellow in fall, then all at once the leaves drop and within hours the tree is bare. Famous for their edible seeds enclosed in infamously stinky fruit. The flesh will actually rot off all on its own, leaving clean edible nuts with no bad smell. The softish nuts can be used in stir-fries. Leaf tea used to enhance circulation to the brain and extremities. Tolerates smoke, dust, wind, ice, insects, disease, salt. Prefers slightly acid well-drained soil, very adaptable, full sun to partial shade. Minimal maintenance requirements, nearly indestructible, an excellent city tree. Male and female tree required for fruit. These are unsexed seedlings. **Plant two or more to increase the chance of fruit.** Native to southeastern China. Z4. **ME Grown.** (2-4')

416A Ginkgo, $17.00



Gleditsia triacanthos **var.** ***inermis*** **Honeylocust** 50' x 30-35' Beautiful fast-growing pyramidal leguminous nitrogen-fixing tree. Bright green lacy leaves provide filtered light, making it good for "two-story" agriculture or great shade for the lawn. Subtle greenish-white flowers turn to sugary pods suitable for cattle or pig forage or even ethanol. Traditionally pods were dried, ground and used in flour. Good for erosion control and often used as a street tree. Plant in full sun, well-drained soil. Tolerates drought, pollution, salt, disease and insects. May have thorns. Native to eastern U.S. Z4. **ME Grown.** (2-4')

417A Honeylocust, $16.50

Why are botanical names important?

Common names are useful and delightful, but not unique. Take, for example, Ironwood, a name we use for the hardwood tree also called Eastern Hophornbeam (*Ostrya virginiana*). In our neck of the woods, Musclewood (*Carpinus caroliniana*), a very different tree, is also called Ironwood. Ask ten other people what an Ironwood tree is and you may get thirty different answers! In fact, Ironwood is a common name to describe dozens of trees with very hard wood. You can imagine how confusing this could get with common names overlapping everywhere. Furthermore, a horse chestnut is not an actual chestnut at all, and the tree we call cedar is not a real cedar (our *Thuja* and *Chamaecyparis* are not *Cedrus*). And sometimes, we don't even call our non-cedar a cedar; we call it Arborvitae. Is your head spinning yet?

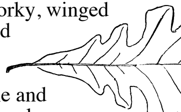
We defer to botanical names to clear up the confusion. A plant's botanical (Latinized) name is unique, so people around the world can talk about plants without confusing each other. Around the time Linnaeus introduced this system, trade was widening and people were moving plant material around the globe faster than ever. With so many plants and languages in the world, Latin became a storage center to synthesize information and served as a kind of hub or common scientific language for identification.

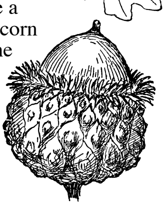
Maybe you are thinking, "This is typical Eurocentric imperialism to rename everything in Latin or Greek." Yes, in the context of the time, it was. Case in point, when the 1905 International Botanical Congress in Vienna first put the rules of nomenclature into writing, they included the recommendation "not to take names from barbarous tongues, unless those names are frequently quoted in books of travel, and have an agreeable form that is readily adapted to the latin tongue and to the tongues of civilized countries." Terrible.

However, it's the system we have, and it's a handy tool to make sure you don't order the wrong plant from a nursery catalog! In this catalog, as in many others, you will find plants listed by both their botanical and common names. In some catalogs, you won't find any common names at all.

Ostrya virginiana **Eastern Hophornbeam** 20-40' x 15-20' Also called **Ironwood** and **Hardhack**. Not to be confused with *Carpinus caroliniana*, Musclewood, which is frequently referred to as hornbeam. An important small native upland understory tree that is tougher than nails. Called Ironwood because it was traditionally used for sled runners, wagon tongues (the part that hitched to the horses), longbows, and other rugged tools. We use it for ax handles. Moderately shaggy greyish-brown bark and birch-like leaves. In fall, the seeds mature in little papery cones resembling hops, providing food for winter birds like the chickadee. Prefers well-drained acidic soil. Full sun or partial shade. Can be drought tolerant and thrive on thin gravelly soil, but water well for the first few years while it gets established. Tolerant of pollution and works well in yards and as a street tree. Native Nova Scotia to most of eastern U.S. Z3. **ME Grown.** (2-4')

418A Eastern Hophornbeam, $17.00





Quercus macrocarpa **Bur Oak** 70-80' x same. Hardiest of the white oaks with a deeply grooved massive trunk and a wide-spreading crown of huge branches. Small branches are distinctively corky, winged and tend to twist and kink. The habit is upright and somewhat vase shaped. Lustrous dark green foliage and large 1–2" acorns, each almost entirely enclosed in a fringed cup. These are edible and low in tannic acid; when roasted they supposedly make a decent coffee substitute. (For detailed instructions on acorn processing, see Samuel Thayer's *Nature's Garden*.) The strongly astringent inner bark, foliage and acorn caps are all medicinal. The most urban-tolerant oak. Fairly fast growing. Needs full sun but adaptable to a wide range of soil types including clay. Monoecious, so you need only one to get fruit. Native to eastern U.S. and Canada. Z3. (2-4')

419A Bur Oak, $17.00

Q. rubra **Red Oak** 60-75' x 45' Also called **Northern Red Oak**. The most common oak in northern New England and a common tree in central Maine. Typically a single large trunk dividing into several large ascending spreading branches. While the branches are not as massive as some of the other oaks, its open rounded crown is magnificent. The trunk is a deep grey textured web of surfaces overlaid one upon another. Sharply toothed foliage turns orange-tan during apple season. Fast growing, up to 2' per year. Prefers well-drained sandy slightly acid soils. Those on our farm thrive in the shallow ledgy ground. Tolerates shade, compacted soil, salt, pollution and other urban conditions. Native to eastern U.S. Z4. **ME Grown.** (2-4')

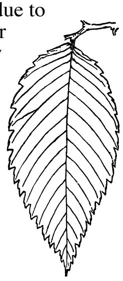
420A Red Oak, $17.00

Salix alba **'Tristis' Niobe Weeping Willow** 50x50' The classic weeping willow, a very large majestic graceful wide-spreading tree. Golden drooping branches, which can hang to the ground, are used for basket weaving; golden bark and leaves used medicinally. Harvest twiggy branches in early spring to make a tincture. Buzzes with life when May flowers attract loads of pollinating bees. Native to southern Europe and western Asia. Z4. (2-4') (More willows on page 48.)

421A Tristis Niobe Weeping Willow, $15.00

Tilia americana **American Linden** 60-80' x same. Also known as **Basswood**, **Butterwood** and **Lime**. Tall stately long-lived tree with rounded crown and numerous low-hung spreading branches. Sweetly fragrant yellow June flowers will attract all the bees in the neighborhood, make the best honey, and also make a popular after-dinner tea and stomach remedy. Sprinkle them on your salad for a festive treat. The young half-size foliage makes a high-quality salad green. Excellent carving wood. Fibrous inner bark used for making cordage. Yellow fall color. Prefers deep rich moist soils. Full sun or partial shade. Sensitive to salt and pollution. Native from New Brunswick to Virginia. Z3. **ME Grown.** (2-4')

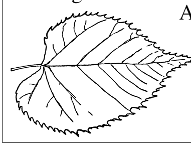
422A American Linden, $17.00



Ulmus americana **'Valley Forge' American Elm** 60-70' x 50-60' US Natl Arboretum intro, 1995. Large fast-growing graceful native once lined virtually every street in New England but declined dramatically due to Dutch elm disease. At maturity, the trunk can reach 4' in diameter with an immense vase-shaped canopy. Long loose branches blow and sway in a hazy breeze on hot summer days. One of the most wonderful shade trees for northern climates. Fortunately, several disease-resistant cultivars have been introduced. Valley Forge was selected in Delaware, OH, and released after 20 years of testing. A good place to go elm-spotting is Castine, ME. The streets there are lined with these beautiful old giants; it feels like stepping back in time. Plant more elms! Soil adaptable; prefers moist areas along rivers and streams but also grows well in drier places. Salt- and drought-tolerant. Z3/4. (2-4')

423A Valley Forge American Elm, $29.00

Basswood, a common name for *Tilia americana*, comes from *bast-wood* referring to the inner fibrous bark, which can be used to make rope.



Another name for this tree is **linden**. Inspired by a linden tree in the yard, Carl Linnaeus's father changed the family name from the patronymic Ingemarsson to Linnaeus. An apple not far from the tree, young Carl Latinized his name into Carolus. Later in life he was ennobled and took the name Carl von Linné.

Conifers

***Abies balsamea* Balsam Fir** 45-75' One of the most abundant of our native conifers. Twigs, inner bark, needles and sap are all medicinal. Small "blisters" contain a transparent aromatic resin that has been traditionally used as an inhalant for headaches and congestion, and as a salve for cuts and arthritis. Needle tea is rich in vitamin C. The fragrant boughs are a favorite for wreaths; the needles used in scented pillows and potpourri. The best of all conifers for a Christmas tree! Narrow, conical, smooth-barked. Prefers well-drained moist acid soil. Avoid polluted areas. Semi-shade tolerant, slow growing. Good hedge or specimen tree, songbird nesting area or rabbit thicket. Native from Labrador to upper eastern U.S. Z3. (9-18")

428A Balsam Fir, bundle of 5, $19.00

***Metasequoia glyptostroboides* Dawn Redwood** 100' One of the most spectacular of the ornamental trees. The wide irregular trunk looks like something out of a fairy tale with its iridescent golden-orange bark that becomes deeply grooved, hollowed and fluted with age. The bright green deciduous needles turn orange in the fall. Grows quickly, up to 50' in 15–20 years, with many small-diameter horizontal branches and a uniform conical habit. Give it lots of space! Highly adaptable, easy to transplant. Prefers moist deep well-drained slightly acid soil and full sun. Will tolerate wet or dry sites. Pollution resistant. Good specimen or street tree; rarely needs pruning. Fossils dating back 50 million years have been found in Japan. Considered extinct until it was "rediscovered" in central China in 1941. Resembles California redwood only vaguely. Native to China and Japan. Z4. **ME Grown.** (1-3')

429A Dawn Redwood, $16.00

***Picea abies* Norway Spruce** 80' Fast-growing wide-spreading upright picturesque tree with graceful long pendulous branches that often reach the ground. Largest of the spruces. If you go to the Mt. Auburn Cemetery in Cambridge, MA, don't miss the ancient Norway spruce just inside the front gate. Several of its massive drooping branches have rooted and turned into secondary trunks. It is truly amazing. Orange-brown scaly bark. Excellent lumber. Showy 4–6" cones. Bright green foliage. Prefers loam but tolerates poorer soils better than other spruces. Native to northern Europe. Z2. (9-18")

430A Norway Spruce, bundle of 5, $19.00

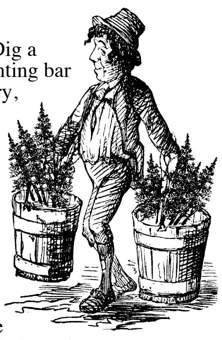
***P. glauca* White Spruce** 60-90' x 10-20' Native conifer to boreal forests, subalpine regions and Acadian forests of North America ranging from Alaska to Newfoundland. Northernmost trees nearly reach the arctic and will withstand winter lows of –70°. Diameter of trunk reaches up to 2'. One of the best trees for wind blocks and privacy screens. Wood commonly used for lumber, pulp and paddles. Harvest bright green spruce tips in late May to early June and process into citrusy sugar, syrup, vinegar or cordials. High in vitamin C. Adaptable and tolerant to wind, drought and cold. Full sun. Z2-6. **ME Grown.** (9-18")

431A White Spruce, bundle of 5, $19.00

***P. pungens* var. *glauca* Colorado Blue Spruce** 30-60' Very popular specimen tree with truer blue foliage than other varieties. Can be used as a screen, as it is fast growing after 3'. There's a beautiful specimen on a lawn facing the Kennebec River near the Hinckley Bridge that owners have dubbed "Bruce the Spruce." So lovely you might want to name yours. Does not like wet soil. Extra spring nitrogen will improve blue color, which doesn't appear for first few years. Native to western U.S. Z2. (9-18")

432A Colorado Blue Spruce, bundle of 5, $19.00

Conifers tolerate a wide range of soil conditions, but prefer a pH between 5.5–6.5. If you are planting in dry or well-drained areas, dip tree roots in a solution of Agri-gel before planting to protect roots from drying out. Do not use Agri-gel in heavy clay soils or wet areas. Do not soak conifers in the Agri-gel solution; a good dipping is sufficient.



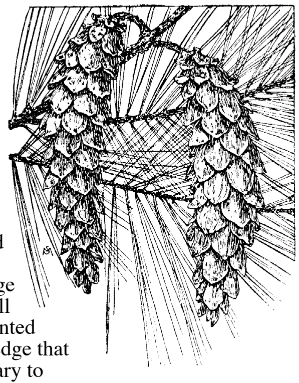
Before planting, prune off a third of the roots. Dig a small hole or make an incision with a spade or planting bar and slip the tree in to the level it grew in the nursery, never below. Fan the roots out; do not wind them around in the hole. It is much better to prune the roots than to crowd them in the hole. Water well and pack the earth down with your feet to remove air pockets.

Young conifers need 3/4–1" of rain per week. Periodic deep waterings are far more beneficial than frequent sprinklings. Fertilization is not necessary in the first year. In later years you may fertilize around the drip line.

To make evergreens dense and compact, remove central leader and center bud on the end of each side branch.

Agri-gel A hydrogel formulation that absorbs and holds water. The swollen crystals adhere to plant roots, reducing transplant shock. Safe, nontoxic, easy to use. Useful for garden seedlings as well as woody plants. Highly recommended for raspberries and conifers. Half-ounce packet mixed with 1 to 3 gallons of water will treat up to 100 cane plants, or 50 trees and shrubs. *Not allowed for organic certification.* 1/2 oz.

L600A Agri-gel, $3.00



***Pinus strobus* Eastern White Pine** 100' or more. The largest northeastern conifer. Magnificent and massive when mature. Smooth greyish-green bark becomes thick, rough and deeply furrowed with age. A cup of pine needle tea has more vitamin C than a cup of orange juice; Native Americans showed early white explorers how to brew it and stave off scurvy. The resin has numerous practical and medicinal applications. Excellent wood with a thousand uses. When grown in abandoned fields, "wolf pines" develop huge curving branches. Grown in the forest it will typically be "clear" for the first 30–80'. Planted thickly and sheared, it makes a beautiful hedge that won't drop its lower branches. Likes ordinary to poor—even sandy—soil. Shade tolerant, but does not like salt or roadsides. Fast growing. Native to eastern U.S. Z3. **ME Grown.** (9-18")

433A Eastern White Pine, bundle of 5, $19.00

***Thuja occidentalis* Eastern White Cedar** 20-60' Also called **Arborvitae**, which means 'tree of life.' Common throughout the entire state of Maine although some stands have been depleted by overcutting. Narrow and tall with twiggy branches, soft fibrous orange-brown bark, and flat foliage unlike that of any other conifer. Foliage and bark tea is high in vitamin C and helps fight infections. Twig decoction makes an antiviral antifungal skin wash. Valuable light fragrant wood, the standard for fence posts and log cabins in Maine. Slow growing, lives up to 400 years. Thrives in rich moist marshy neutral-to-alkaline soils. Good for screens and hedges. A favorite browse of deer. Pruning limbs and leaving them on the ground during a harsh winter helps sustain these animals and is a long-practiced tradition in the forests of Maine. Z2. (9-18")

434A Eastern White Cedar, bundle of 5, $19.00

***Picea pungens glauca*, *P. glauca*, and *P. pungens*—decoded!**

Some botanical names have more than one specific epithet (species name) when the plant needs further distinction. This name could be written in one of two ways, with or without *var*. For **Blue Spruce**, *Picea pungens* var. *glauca* (or *Picea pungens glauca*) refers to its sharp needles (pungens) and its waxy bloom (glauca). **White Spruce**, *P. glauca*, has a waxy bloom as well and is also pointed. Sometimes you'll find Blue Spruce named *P. pungens* (without *glauca*), but *P. pungens* is actually Green Spruce. When shopping for spruces, make sure you're getting the spruce you desire!

So much for botanical names clearing up confusion.

Ordering Instructions

Order online at fedcoseeds.com (click on Fedco Trees).

Or mail your order form to: **Fedco Trees, PO Box 520, Clinton, ME 04927**. Please use a current catalog.

- Use the 2019 order form; you may submit as many pages as you need: photocopies, forms downloaded from our website, or printouts mimicking our format.
- Keep a copy of your order for your records. To confirm receipt of your order, enclose a stamped self-addressed postcard.
- We do not take fax or phone orders.

Scionwood orders and early shipment of rootstock: Order online or use the order form on p. 37. More information on p. 16.

Volume discounts! if you order by January 11, 2019. Sorry, no volume discounts on later orders. Discounts apply only to orders either picked up or shipped to one address. Please see order form for details.

Payment

We accept check, money order, Visa, MasterCard, Discover, and AmEx; payment must accompany all orders. We request that mailed orders under $25 pay by check or MO. Make your check out to Fedco. We will charge your card when we receive your order. We will bill or refund you for any adjustments as each order is completed.

Sales Tax

Maine residents and pickup customers pay 5.5% on all goods purchased. Maine farmers: Please send us a copy of your farm exemption. Otherwise we must charge sales tax. There is no sales tax for orders shipped outside of Maine.

Group Orders

- We accept group orders online. Group coordinators can click on Group Ordering on the Fedco Trees page for instructions.
- By mail, send us at one time all your members' order forms with one payment and receive the individually packaged orders at one address. The group total earns the discount, if any. Use an additional order form for a group cover sheet. Keep copies of members' orders.

Handling Charges

We charge $10 for handling each time you adjust your order. Additions and deletions are costly for us to process. You are welcome to place as many separate orders as you wish.

Sorry! You can't have that. Some states have restrictions on imported plants. Please check this list to make sure you're not trying to order something that's restricted in your area.

- We do not ship any plants **outside the U.S.**
- We cannot ship any plants to **Indiana** because of its Black Vine Weevil certification requirement.

AZ: *Carya* spp. Hickory; *Juglans* spp. Walnut
CA: *Carya* spp. Hickory; *Castanea* spp. Chestnut; *Juglans* spp. Walnut; *Pinus* spp. Pine; *Quercus* spp. Oak
CO: *Artemesia absinthium* Wormwood. Some counties prohibit *Prunus* spp. Cherry, Peach, Plum. Please check your county regulations.
CT: *Valerian officinalis*
FL: *Castanea* spp. Chestnut; *Cornus* spp.; *Quercus* spp. Oak
GA: *Vaccinium* spp. Blueberry, American Cranberry
ID: *Humulus lupulus* Hops; *Vitis* spp. Grape
KS: *Juglans* spp. Walnut
MI: *Abies* spp. Fir; *Vaccinium* spp. Blueberry, American Cranberry, Lingonberry
MT: *Pinus* spp. Pine
ND: *Artemesia absinthium* Wormwood
NJ: *Rosa* spp. Rose
NM: *Carya* spp. Hickory
NY: *Vitis* spp. Grape

OR: *Castanea* spp. Chestnut; *Corylus* spp. Hazelnut; *Humulus lupulus* Hops; *Vaccinium* spp. Blueberry, American Cranberry; *Vitis* spp. Grape
TX: *Carya* spp. Hickory; *Juglans* spp. Walnut
WA: *Artemesia absinthium* Wormwood; *Castanea* spp. Chestnut; *Corylus* spp. Hazelnut; *Humulus lupulus* Hops; *Vaccinium* spp. Blueberry, American Cranberry, Lingonberry; *Vitis* spp. Grape

Plants in soil medium cannot be shipped to the following states: AK, AL, AR, AZ, CA, HI, ID, KS, MS, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA. The following plants come in soil: *Actinidia* spp. Kiwi; *Alcea* Hollyhock; *Arctostaphylos uva-ursi* Bearberry; *Armeria maritima* Sea Thrift; *Calluna vulgaris* Heather; *Cornus sericea* Redosier Dogwood; *Delphinium; Digitalis mertonensis* Strawberry Foxglove; *Gaultheria procumbens* Wintergreen; *Lonicera caerulea* Honeyberry; *Pulsatilla vulgaris* Pasque Flower; *Rubus* Nelson Blackberry; *Salix* spp. Willow; *Sempervivum* Hens & Chicks; *Vaccinium angustifolium* Lowbush Blueberry Sod; *V. corymbosum* Highbush Blueberry; *V. macrocarpon* American Cranberry; *V. vitis-idaea* Lingonberry

Deadlines

- **Volume discount deadline is January 11, 2019.**
- **Scionwood order deadline is February 15, 2019.**
- **Final order deadline** (except scionwood) **is March 1, 2019.**

Shipping

See the order forms for pricing details and volume discounts.

- We ship via UPS ground or USPS Priority Mail; our choice based on weight.
- We fill all orders on a first-come first-served basis.
- **Alaska** shipments go via USPS Priority Mail. Please include a postal address. This rate also applies to anyone in the Lower 48 who requires postal delivery.
- **Small & Light shipping** applies only to items with stock numbers beginning with **L**: perennials, bulbs, strawberries, rhubarb, hops, asparagus, scionwood, and more. If you order any other items in addition to these, you must pay the regular shipping charges.
- **Special Ship Dates:** If you require a specific ship date during our regular shipping time (3/25–4/12), we'll charge $15 to cover extra handling costs. *We do not ship outside of this range of dates.*

When will my order arrive? We send an email with the UPS or USPS tracking number when it leaves our warehouse. If you're in New England, it may take one day to arrive. If you're outside New England, it may take several days.

- Scionwood and early rootstock orders ship **around March 11**.
- We ship everything else beginning **around March 25**, continuing until around April 12, according to planting zone.

Pickup

- Please note that we require a **minimum subtotal of $50 for pickup** orders. All smaller orders must be shipped.
- **Pick up your order at our annual Tree Sale** at our warehouse, 213 Hinckley Rd. in Clinton, ME. Friday and Saturday, **April 26–27**, are reserved for preorder customers. The second Friday and Saturday, **May 3–4**, we are open to the public.
- Tree Sale hours are **9:00–3:00 each day**.
- **Early Pickup:** If you don't plan to shop at our Tree Sale, you can pick up your order at our warehouse April 23, 24 or 25, Tuesday through Thursday, between 9:00–3:00. Less fun, but shorter lines.
- We will send you a pickup reminder and map in April.
- If you fail to pick up your order, we'll charge $15 handling plus cost of shipping to send you your order. Please don't make us do this.
- We will offer surplus for sale at the Tree Sale. Sometimes we have stock left over after the Tree Sale, but not after mid-May when we shut down completely and go home to plant.

Substitutions

When dealing with live plants, we can never be certain that we can fill your order. If something becomes unavailable, our default mode is to substitute a similar variety because most people prefer a similar tree or plant to a refund. On the order form, if you indicate you don't want any substitutions, we'll send a refund. If you order apples, please indicate whether you will accept the varieties on similar rootstocks.

Out of Stocks

Some customers wonder why we don't contact them when something on their order is out of stock. We understand the inconvenience. Some of our stock arrives in November to be stored through the winter, but much more of it arrives in early spring just before—or even during—shipping. When we don't know about a shortage or crop failure until the last minute, it's impossible to contact customers. We do our best to please you, but we'll never be able to compete with the volume offered by big box stores and giant websites. However, we think you'll find we've got them all beat on quality and variety.

Plant sizes

Sizes listed for each item should be considered an average. The trees and shrubs in your order will sometimes be slightly larger and occasionally smaller than these projections. Unfortunately, we can't take requests for particular sizes or branching preferences. But fret not—you will receive healthy trees with excellent root systems. In our experience, smaller trees with well-proportioned roots suffer less transplant shock and wind up out-growing larger stock. If trees were like widgets, we could stamp them all out the same on our 3D printer. But these are living things. We're glad every one of them is unique.

Fedco Trees 2019

PO Box 520 Clinton, ME 04927

www.fedcoseeds.com

(From mailing label) CC-____________________

Farm or Group Name____________________

Name____________________

US Mail Delivery Address____________________

Town________________ St____ Zip________

UPS Delivery Address____________________
(if different)

Town________________ St____ Zip________

Phone________________ Email________________

Volume discount cutoff:
January 11, 2019
Final order deadline:
March 1, 2019

Visit fedcoseeds.com to check product availability.

Delivery Options ✓ choose one:

☐ **Ship** in late March to mid-April.

☐ **Pickup at Tree Sale** in Clinton. Pay no shipping.
Must have a minimum subtotal of $50.

☐ **Early Pickup** in Clinton, April 23, 24 or 25. Pay no shipping.
Must have a minimum subtotal of $50. (Sorry, no shopping on these days!)

Substitutions (see p. 34)

	Yes	No
I will accept a similar variety.	☐	☐
I will accept similar rootstock. (Applies to apple trees only.)	☐	☐

Volume Discounts: (*only orders received by* **1/11/19**)

Subtotals over $100	take 5% off
over $300	take 10% off
over $600	take 15% off
over $1200	take 20% off

Shipping Charges: (we ship by UPS or Priority Mail, our choice)

All item #s begin with L	Adjusted Total	Shipping Charge
Small & Light Shipping	under $67.00	$10.00
	over $67.00	15% of Adjusted Total
All other orders	**Adjusted Total**	**Shipping Charge**
Regular Shipping (Continental US)	under $150.00	$22.50
	over $150.00	15% of Adjusted Total
Alaska Shipping (Priority Mail only)	under $125.00	$25.00
	over $125.00	20% of Adjusted Total

Subtotal from reverse (minimum of **$50** for pickup orders)	
Volume Discount	–
1% Fedco Member Discount from Subtotal (see p. 70)	–
Adjusted Total	=
ME residents & pickups add 5.5% **Tax**	+
Shipping	+
Total	=
Donate to MeHO Maine Heritage Orchard, see p. 14	+
Grand Total	=

(Please make checks payable to **Fedco**.)

- **See complete ordering information on page 34.**
- For early shipment of rootstock or for scionwood, order online or use the scionwood form on page 37.
- If you require Priority Mail delivery, use the Alaska rates.
- We will add a $10 handling fee each time you ask us to make adjustments after we have received your order.
- Orders will ship between March 25 and April 12; we will add a $15 handling fee if you specify a particular shipping date within this range. *Sorry, we do not ship at later times.*
- We require a minimum subtotal of $50 to place a pickup order.
- Consider donating your refund to MeHO (the Maine Heritage Orchard) at MOFGA (page 14).

We accept Visa, MasterCard, American Express and Discover Card ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Exp. Date ☐☐ ☐☐

Help support the Maine Heritage Orchard:

☐ Donate all my refund to MeHO
☐ up to $5.00
☐ up to $2.00

Fedco Trees 2019: Trees, Shrubs & other Plants

	Item #	Qty	# plants per pkg	Description	Price each	Total Price
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
					Subtotal (carry to other side)	

If you are ordering more than 28 items, copy this page or our format and submit as many pages as you need.

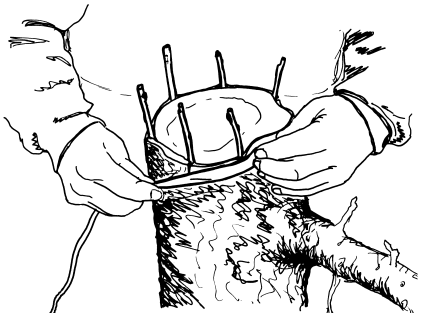
If you order *only* item numbers beginning with **L**, you qualify for our **Small & Light** shipping rate. See other side for details.

Comments:

Fedco Trees 2019

Scionwood

PO Box 520 Clinton, ME 04927
www.fedcoseeds.com



(From mailing label) CC-______________________________

Farm or Group Name______________________________

Name______________________________

US Mail Delivery Address______________________________

Town______________________ St______ Zip__________

UPS Delivery Address______________________________
(if different)

Town______________________ St______ Zip__________

Phone______________________ Email______________________

Orders for scionwood and
early shipment rootstock
must be submitted by
February 15, 2019

Delivery Options:

☑ **Ship** around March 11. *(Sorry, we cannot ship scionwood at other times or hold scionwood for pickup.)*

Shipping Charges: (we ship by UPS or Priority Mail, our choice)		
Scionwood only	**Adjusted Total**	**Shipping Charge**
Small & Light Shipping	under $67.00	$10.00
	over $67.00	15% of Adjusted Total
Ordering rootstock?	**Adjusted Total**	**Shipping Charge**
Regular Shipping (Continental US)	under $150.00	$22.50
	over $150.00	15% of Adjusted Total
Alaska Shipping (Priority Mail only)	under $125.00	$25.00
	over $125.00	20% of Adjusted Total

Scionwood Total (from reverse)	
Rootstock Total (from reverse)	+
Subtotal	=
1% Fedco member discount (see p. 70)	–
Adjusted Total	=
Maine residents **only** add 5.5% **Tax**	+
➤ **Shipping**	+
Grand Total	=

(Please make checks payable to **Fedco**.)

Scionwood, or scions, are twigs for grafting. They are $5 each and are approximately 8" long.
For larger quantities consider buying by the foot: 10-foot minimum per variety, $4.50 per foot.
Scionwood quantities are limited, so order early.

We will ship scionwood and early rootstock orders around March 11, 2019. Scionwood-only orders will possibly ship a little sooner and orders with rootstock will possibly ship a little later. Remain calm. **You will receive an email notification when your order ships.** We routinely send scions and rootstock during cold and freezing weather. They are fine in their packaging no matter how low the temps are during shipping. It's also not unusual for packages to be delayed by snowstorms. Even if your order spends an extra couple days in transit or your scions have icicles hanging off of them, the plant material will still be OK to use.

Please note: We try to provide wood that is close to 1/4" in diameter. When only smaller wood is available and we consider it usable, we send it. We do not issue refunds or replacements based on diameter of wood. Nature is variable and some varieties do not grow large wood. We expect that you know how to graft and will bend your grafting methods to meet the materials. If the wood is too small to use the whip-and-tongue method, let the bark slip on the stock and make a bark graft instead.

- **For more information about storing and collecting scionwood**, see page 16.
- **For descriptions of scionwood varieties**, please check our website: fedcoseeds.com/trees.
- **For grafting supplies and literature**, please refer to the Organic Growers Supply section of the Fedco Seeds catalog.

We accept Visa, MasterCard, American Express and Discover Card ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐
Exp. Date ☐☐ ☐☐

Help support the Maine Heritage Orchard:

☐ Donate all my refund to MeHO
☐ up to $5.00
☐ up to $2.00

Fedco Trees 2019: Scionwood

Apples	Quantity sticks	 feet
L-801 Alexander		
L-802 Ashmead's Kernel		
L-803 Ashton Bitter		
L-804 Autumn Arctic		
L-805 Baldwin		
L-806 Beefsteak		
L-807 Belle de Boskoop		
L-808 Ben Davis		
L-809 Bethel		
L-810 Bitter Pew		
L-811 Black Oxford		
L-812 Blake of Windham		
L-813 Blue Pearmain		
L-814 Brandywine Crab		
L-815 Briggs Auburn (Waldo)		
L-816 Burgundy		
L-817 C'Huero Ru Bienn		
L-818 Calville Blanc d'Hiver		
L-819 Canada Reinette		
L-820 Canadian Strawberry		
L-821 Centennial		
L-822 Charette		
L-823 Cherryfield		
L-824 Chestnut		
L-825 Chisel Jersey		
L-826 Clarence Knight		
L-827 Cole's Quince		
L-828 Cortland		
L-829 Cox's Orange Pippin		
L-830 Dabinett		
L-831 Danziger Kantenapfel		
L-832 Deane (aka Nine Ounce)		
L-833 Early Harvest		
L-834 Egremont Russet		
L-835 Ellis Bitter		
L-836 Empire		
L-837 Esopus Spitzenburg		
L-838 Fameuse		
L-839 Fireside		
L-840 Gala		
L-841 Golden Ball		
L-842 Golden Russet (of NY)		
L-843 GoldRush		
L-844 Goodland		
L-845 Granite Beauty		
L-846 Gray Pearmain		
L-847 Grimes Golden		
L-848 Harmon (aka Davis Purple)		
L-849 Harrison		
L-850 Harry Masters Jersey		
L-851 Holzer Russet		
L-852 Honeycrisp		
L-853 Honeygold		
L-854 Hudson's Golden Gem		
L-855 Hurlbut		
L-856 Idared		
L-857 Jonagold		
Column 1 Total		

	Quantity sticks	 feet
L-858 Jonathan		
L-859 Kavanagh		
L-860 Keepsake		
L-861 King of Tompkins County		
L-862 Kingston Black		
L-863 Koidu Reinette		
L-864 Kola		
L-865 Legace		
L-866 Liberty		
L-867 Macoun		
L-868 Maiden Blush		
L-869 Major		
L-870 Mann		
L-871 Mantet		
L-872 Marlboro		
L-873 Martha Crab		
L-874 McIntosh		
L-875 Medaille d'Or		
L-876 Milo Gibson		
L-877 Milton		
L-878 Mollie's Delicious		
L-879 Moses Wood		
L-880 Nehou		
L-881 Newtown Pippin		
L-882 Nodhead		
L-883 Northern Spy		
L-884 Northwestern Greening		
L-885 Opalescent		
L-886 Peach of Montreal		
L-887 Pewaukee		
L-888 Pipsqueak		
L-889 Pomme d'Or		
L-890 Pomme Grise		
L-891 Poorfarm Pleasure		
L-892 Porter		
L-893 Pound Sweet		
L-894 Prima		
L-895 Priscilla		
L-896 Pumpkin Sweet (Mt Vernon ME)		
L-897 Redfield		
Column 2 Total		

	Quantity sticks	 feet
L-898 Rhode Island Greening		
L-899 Ribston Pippin		
L-900 Rome		
L-901 Roxbury Russet		
L-902 Royal Sweet		
L-903 Screen Shot		
L-904 Sharon		
L-905 Shavel Sharp		
L-906 Sidrunkollane Talioun		
L-907 Smokehouse		
L-908 Spartan		
L-909 Spencer		
L-910 St. Edmunds Russet		
L-911 St. Lawrence		
L-912 Starkey		
L-913 State Fair		
L-914 Summer Rambo		
L-915 Sweet Red (aka Ramsdell Sweet)		
L-916 Sweet Sixteen		
L-917 Tarecap Bitter		
L-918 Tater House		
L-919 Thompson		
L-920 Tolman Sweet		
L-921 Trailman		
L-922 Twenty Ounce		
L-923 Wagener		
L-924 Washington Sweet		
L-925 Wealthy		
L-926 Westfield Seek-No-Further		
L-927 Wickson		
L-928 Williams Pride		
L-929 Wilson Juicy		
L-930 Winter Banana		
L-931 Wolf River		
L-932 Yarlington Mill		
L-933 Yellow Transparent		
Column 3 Total		
Total Number Ordered		
$ Total Sticks (@$5.00 ea.)	$	
$ Total Feet (@$4.50/ft)	$	

(Minimum 10 feet per variety)

Scionwood sticks are around 8" long with a 1/4" caliper when possible. $5.00/stick.

For larger quantities, order by the foot for $4.50/foot. (10' minimum)

ROOTSTOCK—bundle of 10

Rootstock is approximately 1/4" caliper.

See page 16 for descriptions.

		Price	Qty	$Total
225-B	Malus Antonovka	$29.50		
226-B	M. Budagovsky 118	$29.50		
227-B	M. M111	$29.50		
228-B	M. Geneva 11	$33.50		
229-B	M. Budagovsky 9	$29.50		
230-B	Prunus americana	$29.50		
231-B	P. avium	$29.50		
232-B	P. cerasifera	$29.50		
233-B	Pyrus OHxF97	$29.50		
	Bundles Ordered			

Small Trees and Shrubs

As Green's Nursery catalog from 1904 explains, "there are many trees that by pruning can be made to resemble shrubs, and many shrubs that by different pruning may be made to produce medium-sized trees."

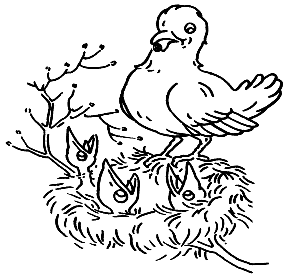
Amelanchier Also called **Juneberry**, **Parsonberry**, **Serviceberry**, **Saskatoon**, **Shadblow**, **Shadbush** and **Shad**. Folks downeast call it **Wild Pear.** Very hardy genus of spring-flowering shrubs and small trees with edible berries. Beautiful fragrant 5-petaled white flowers are early harbingers of spring in Maine. Purplish-black sweet berries good in pies, cobblers, jellies, jams, smoothies and cakes. Berries are about the size of a lowbush blueberry, or a bit larger, and seedier. Popular with wildlife. Nice red-orange fall color. Thrives along stream beds as well as on rocky slopes. Tolerates partial shade, salt, pollution and wet spots but not standing water. **Considered to be self-fruitful but** we recommend planting with other Amelanchiers to ensure pollination. Taxonomy of Amelanchiers are a point of confusion in the nursery trade where common names and even botanical names are used interchangeably. Furthermore, these plants easily hybridize with each other in nature. Below, we've highlighted salient features of each species. (1-3')

***A. alnifolia* 'Regent'** 4-6' x same. Commonly called **Juneberry** or **Saskatoon**. J. Candrian intro, Faribault, MN, 1997. An open-pollinated seedling originating near Regent, ND. Compact prolific shrub with sweet purple-magenta berries. Fruit ripens in mid-July in central Maine. Plant in well-drained fertile soil and full sun. Foliage somewhat susceptible to leaf spot or rust but this doesn't affect the fruit. Native to northwestern North America. Z2.

437A Regent Juneberry, $15.00

***A. laevis* Allegheny Serviceberry** 15-25' The most common Amelanchier in Maine. The unique purplish-orange bronzed color of the unfolding leaves on this understory tree is a favorite spring sight. Pendulous white blossoms precede the young leaves and are followed by berries that ripen in midsummer. Referred to as **Shad** or **Shadbush** by old-timers because the blossoms coincide with the spring shad run in certain Maine streams. Likes well-drained acid soils along the edge of fields, streams and roads. Native midwest to eastern U.S. and Canada. Z2. **ME Grown.**

438A Allegheny Serviceberry, $15.00



Cultivars and varieties

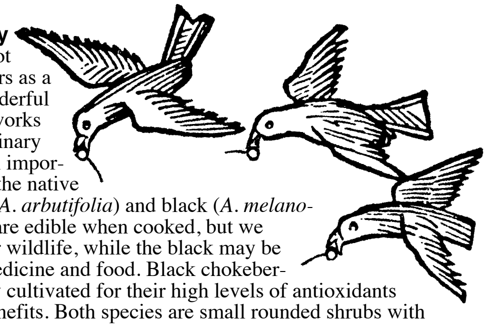
Cultivar is short for 'cultivated variety.' A **cultivar** is a plant that has been bred; it does not occur naturally in the wild.

A **variety** is a plant that occurs naturally in the wild and is chosen for commercial propagation to maintain its genetic characteristics.

In the nursery trade, the terms 'cultivar' and 'variety' are mistakenly used interchangeably. We do it, too. Both cultivar and variety names follow the botanical name (*Genus species*) and are enclosed in single quotes.

In the tree and shrub world, most cultivars and varieties are propagated clonally by cuttings or grafting. When there is no variety or cultivar name after the botanical name, the plant is most likely grown from seed. We often refer to these as "the species" of a plant, or as seedlings.

***Aronia* Chokeberry** Aronia has gotten a lot of press in recent years as a superfruit: it has wonderful medicinal qualities, works well in a range of culinary applications and is an important wildlife plant in the native landscape. Both red (*A. arbutifolia*) and black (*A. melanocarpa*) chokeberries are edible when cooked, but we emphasize the red for wildlife, while the black may be a better choice for medicine and food. Black chokeberries are commercially cultivated for their high levels of antioxidants and myriad health benefits. Both species are small rounded shrubs with blueberry-sized fruit and electric-red fall foliage. Begins to bear fruit in its third year and increases to full yield around five years. Ripens in late July or early August. If not harvested, the berries will hang on the bushes until songbirds eat them in late winter. Will form colonies. Not particularly picky about where it grows: adaptable to moist or dry areas, sun or partial shade. Free of diseases and insects. Native to eastern U.S. **Self-fruitful**. Z3/4. (1-3')



***A. arbutifolia* 'Brilliantissima'** 6-8' x 3-4' In *The Best of the Hardiest*, John Sabuco calls red chokeberry "one of our finest native landscape shrubs." Upright multi-stemmed form. Dense clusters of small white flowers with red stamens. Birds love the abundant persistent glossy bright red fruit. With "brilliant" fall foliage, this plant is the best alternative to the invasive burning bush.

439A Brilliantissima Red Chokeberry, $15.00

***A. a.* Red Chokeberry Seedlings** 6-10' x 3-6' Each one is genetically unique. Beautiful in mass plantings and borders. Plant several in a hedge and make the birds happy! **ME Grown.**

440A Red Chokeberry Seedling, $14.00

440B Red Chokeberry Seedlings, bundle of 5, $59.50

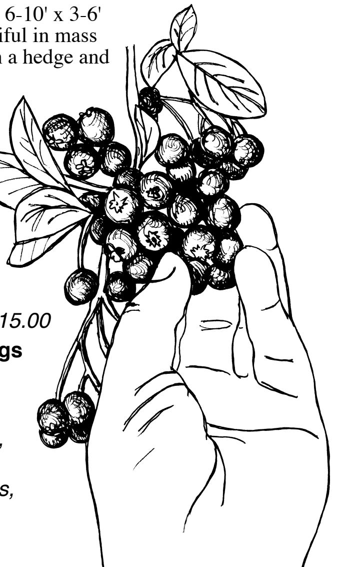
***A. melanocarpa* 'Viking'** 4-6' x same. Introduced in Sweden. Upright vigorous high-yielding shrub produces large dark tasty berries.

441A Viking Black Chokeberry, $15.00

***A. m.* Black Chokeberry Seedlings** 3-6' x same. Each one is genetically unique. Plant several for an attractive edible hedge. **ME Grown.**

442A Black Chokeberry Seedling, $14.00

442B Black Chokeberry Seedlings, bundle of 5, $59.50



What, why, huh?!

We've noticed that some plant folks resent the Latinized botanical names, while others seem to revel in speaking this foreign tongue. As plant lovers but also word lovers, we use all the names! No one will stop you from reciting the luxuriant litany of common names for the Amelanchiers, but here's a handy break-down of the botanical name *Amelanchier alnifolia* 'Regent' as an example for untangling the Latin:

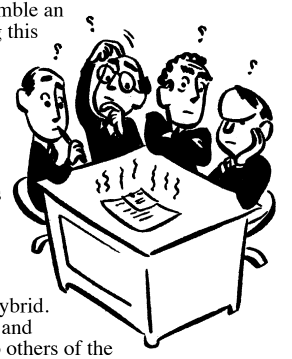
The plant's **genus**, the general group to which it belongs, is always expressed with a capitalized word, such as *Amelanchier*. But there are many differences in leaf, fruit and flower among the plants within the genus *Amelanchier*. Which brings us to:

The plant's **species**, which specifies its character more precisely through use of an adjective or epithet that follows the genus and is always lowercase. The word *alnifolia* means 'leaves that resemble an alder,' which could be useful in identifying this plant. But sometimes there is still another word in a plant's name:

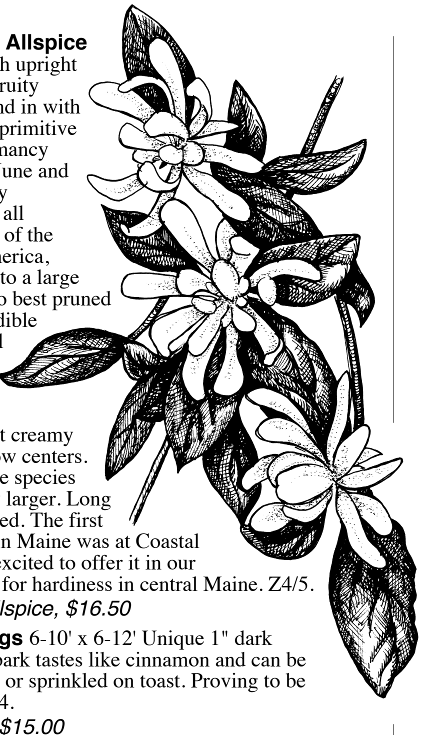
A capitalized word in single quotes expresses a **cultivar** or **variety**, which was selected or bred by someone. In our example, 'Regent' was a seedling selected by someone for its desirable qualities and thus propagated.

Sometimes a botanical name will get more complicated:

An **x** between words means the plant is a hybrid. The abbreviation **var.** is short for 'variety' and indicates a variation in a plant compared to others of the same species. A subspecies is expressed as **ssp.**, **subsp.**, or **sub.**



Calycanthus floridus Carolina Allspice Beautiful aromatic native shrub with upright magnolia-like flowers and a spicy fruity fragrance. Sepals resemble and blend in with the petals, a characteristic of many primitive plants. Blooms while breaking dormancy starting late April, continuing into June and sporadically through summer. Shiny polished leaves stay lush and green all summer. Dirr considers it to be one of the great treasures of eastern North America, especially when allowed to grow into a large specimen. Flowers on new wood, so best pruned in summer. In warmer climates inedible poisonous fruit will develop. Partial sun, moist rich soil. Native to stream edges and woodlands of southeastern U.S. (1-3')

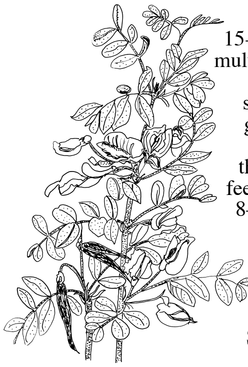


_C. f._ 'Venus' 5-7' x same. Fragrant creamy white flowers with purple and yellow centers. Overall plant size is smaller than the species though the flowers are significantly larger. Long distinctive petals are loosely arranged. The first time we saw this stunning cultivar in Maine was at Coastal Maine Botanical Gardens. We are excited to offer it in our catalog for the first time and trial it for hardiness in central Maine. Z4/5.

443A Venus Carolina Allspice, $16.50

_C. f._ Carolina Allspice Seedlings 6-10' x 6-12' Unique 1" dark burgundy-maroon flowers. Edible bark tastes like cinnamon and can be used to spice puddings and desserts or sprinkled on toast. Proving to be hardy in our central-Maine trials. Z4.

444A Carolina Allspice, $15.00

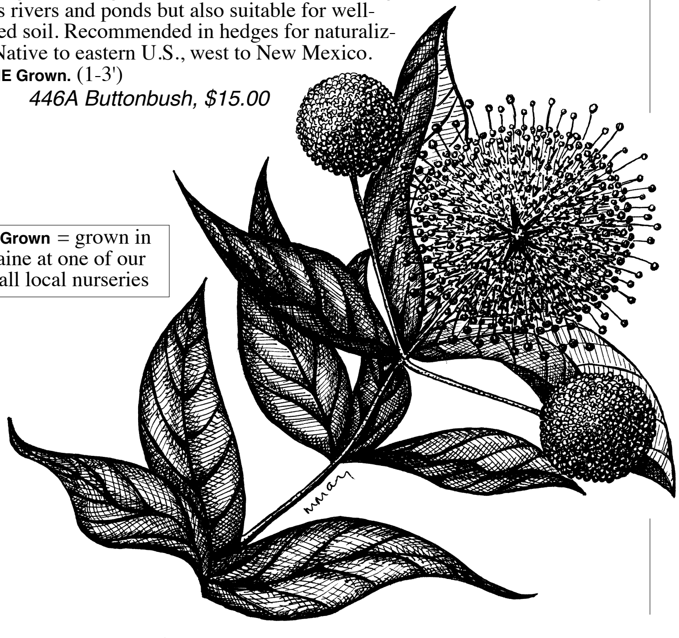


Caragana arborescens Siberian Peashrub 15-20' Nitrogen-fixing cheerful bright green upright multi-stemmed oval shrub well suited to windbreaks, hedges and borders. Delicate yellow flowers in spring are followed by small seed pods that turn a golden yellow. The pods and the small "peas" are edible; eaten raw, they taste like garden peas, though not as sweet. Makes an acceptable chicken feed. Silvery bark and compound foliage, each with 8–12 small obovate leaflets. Easy to grow; just put them in and let them go. Adaptable to poor soils, drought, salt. Full sun. Maintenance free. Occasionally rumored to be invasive, although ours have stayed put for decades and not spread by seed or root. Self-fertile. Native to Siberia and Manchuria. Z3. (1-3')

445A Siberian Peashrub, $14.25

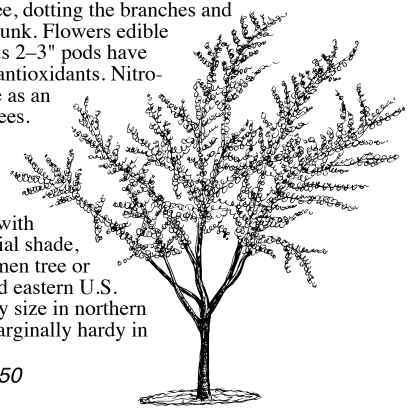
Cephalanthus occidentalis Buttonbush 6-10' x 8' Loose rounded branchy shrub with masses of unusual spherical fragrant white flowers that appear for 4–6 weeks in summer—a magnet for every honeybee around. These highly ornamental blooms the size of ping-pong balls do well in dried flower arrangements. The seeds (nutlets) make good duck fodder in the fall. Bright green foliage. Often found in masses along the shores of New England's rivers and ponds but also suitable for well-drained soil. Recommended in hedges for naturalizing. Native to eastern U.S., west to New Mexico. Z4. **ME Grown.** (1-3')

446A Buttonbush, $15.00



ME Grown = grown in Maine at one of our small local nurseries

Cercis canadensis Redbud 25-30' x same. Small vase-shaped single- or multi-stemmed tree is highly ornamental with edible flowers and seeds. In early spring, clusters of small brilliant purplish-pink pea-like flowers are so abundant they fill the entire tree, dotting the branches and even coming right out of the trunk. Flowers edible raw or cooked. Flat leguminous 2–3" pods have roastable edible seeds high in antioxidants. Nitrogen-fixing tree is also valuable as an early-season nectar plant for bees. Large heart-shaped leaves emerge opaque pink, mature to deep green and turn yellow in fall. Smooth dark bark becomes plated and brick-red with purple undertones. Sun or partial shade, soil adaptable. Fine as a specimen tree or in groups. Native to central and eastern U.S. and may not reach full maturity size in northern areas. Very tender and only marginally hardy in Zone 5. **ME Grown.** (1-3')



447A Redbud, $16.50

Common species names

Knowing the meanings of common species names can be quite helpful in improving identification skills in the field. Helpful hint: Latin nouns and adjectives are male, female or neuter; singular or plural. Grammatically, the species gender will often conform with the genus gender, but not always. Don't despair: It's not necessary to master Latin to grasp the similarities. For example, *rubra* (f.), *ruber* (m.) or *rubrum* (n.) all mean 'red.'

Arborescens means 'tree-like.' When you see this in a shrub's name, its likely the form will be more like a small tree than a shrub, like *Caragana arborescens* Siberian Peashrub.

Canadensis means 'from Canada' and is a good clue that the plant is likely cold hardy, like *Sambucus canadensis* or *Sanguinaria canadensis*.

Edulis means 'edible.' Be sure to double-check this, and note which part, if any, is actually edible!

Florida or *floridus* means 'produces abundant flowers.' *Calycanthus floridus* Carolina Allspice is known for its flowers.

Glauca or *glaucus* plants will be covered with a waxy bloom, like *Picea glauca* White Spruce.

Laevis or *laevigata* means 'smooth,' like *Amelanchier laevis*, which has smooth hairless foliage.

Lenta means 'pliable,' like the bendy twigs of the *Betula lenta* Sweet Birch.

Maritima means 'by or of the sea,' like *Prunus maritima* Beach Plum or *Armeria maritima* Sea Thrift, both plants that tolerate salt!

Officinalis or *officinale* means 'sold in shops' and applies to edible, medicinal and otherwise historically useful plants of the pharmacopoeia.

Pungens means 'sharply pointed.' *Picea pungens* var. *glauca* Blue Spruce, has sharp needles with a waxy bloom!

Radicans means 'rooting,' so the plant is likely to layer itself easily as a form of reproduction, like *Campsis radicans* Trumpet Vine.

Racemosa means 'flowers in racemes' (floral stalks), like *Actaea racemosa* Black Cohosh.

Sempervivum or *sempervirens* means 'always alive' or 'evergreen,' like *Lonicera sempervirens*, which keeps its green color late in the season, or Hens and Chicks, succulents that stay green all winter.

Sericea (also *sericeus* or *sericeum*) means 'silky,' like the soft hairs on the young leaves and stems of *Cornus sericea* Redoisier dogwood.

Tomentosa means 'densely woolly' like the undersides of the leaves of *Prunus tomentosa* Steeplebush. This helps to distinguish it from Meadowsweet, *Filipendula ulmaria*, which can resemble Steeplebush when young and flowerless.

Vulgaris means 'common,' like *Syringa vulgaris* Common Purple Lilac or *Calluna vulgaris* Heather. These are the not-so-fancy common species.

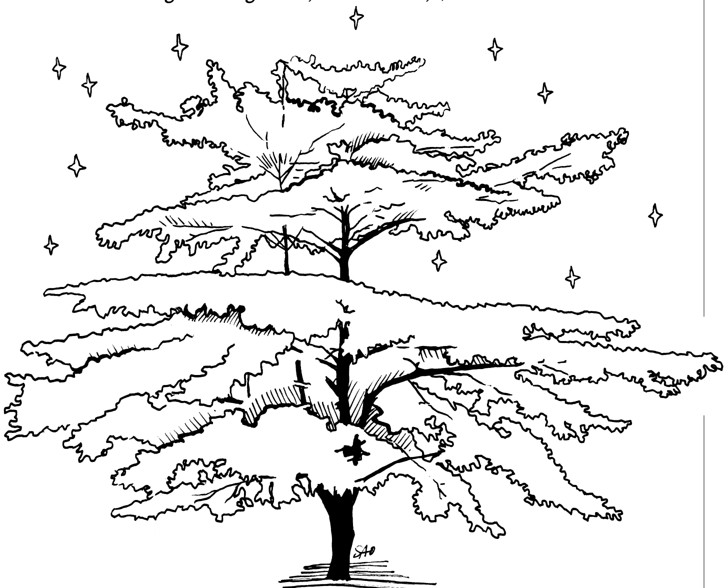
The suffix *-oides* is Greek for 'like' or 'resembling.' *Deltoides* is 'triangle-like' or 'triangular,' usually referring to the leaf shape, as in *Populus deltoides*, the commonly seen Eastern Cottonwood with its deltoid leaves.

Dawn Redwood *Metasequoia glyptostroboides* means that this tree resembles plants of the genus *Glyptostrobus* that contains cypress and conifers with similarly fluted trunks.

The suffix *-folius* (or *-folia* and *-folium*) pertains to leaf descriptions, like *alternifolia* to describe alternating leaves. *Alnifolius* leaves resemble those of the alder, and leaves of *quercifolia* plants resemble leaves of oak, of the genus *Quercus*. *Quinquefolia* leaves are five-fingered, like Virginia Creeper *Parthenocissus quinquefolia*. Say that one quickly several times in a row!

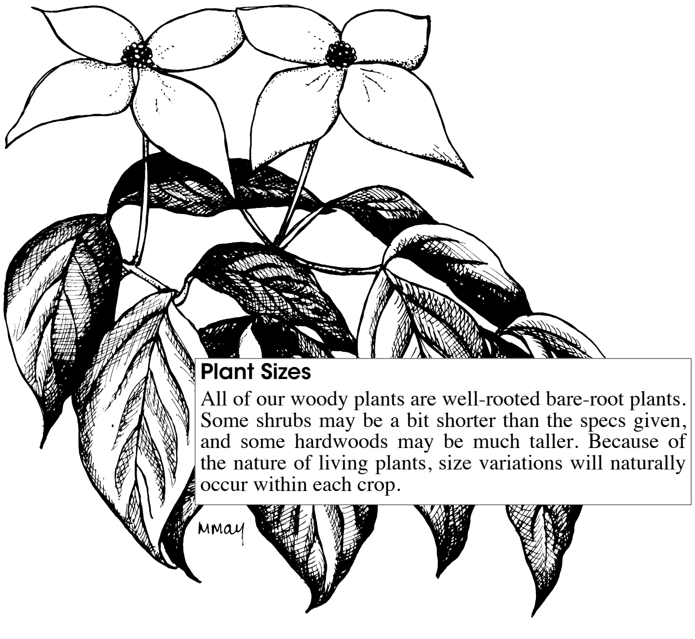
***Cornus alternifolia* Pagoda Dogwood** 20' x 30-35' Also known as **Alternate-Leaved Dogwood**. Small tree or large multi-stemmed shrub, particularly beautiful with its tiers of horizontal branches and fragrant white 2–3" flower clusters. These appear in mid-late spring followed by immature olive-green berries, each tipped with a tiny bright yellow style remnant. In midsummer clusters of dark blue berries ripen above the blue-green foliage. One of the most popular dogwoods with the birds. Roots, bark and inner bark all medicinal. Prefers partial shade and moist well-drained acid soil, but tolerates full sun, poor soil and even clay. pH adaptable. Excellent naturalized as a specimen or in groups. Reddish-purple fall color. Susceptible to golden canker: when dormant, prune out diseased branches to prevent spores spreading to the trunk. Native to eastern U.S. Z3. (1-3')

448A Pagoda Dogwood, $16.00
448B Pagoda Dogwood, bundle of 5, $69.50



***C. kousa* var. *chinensis* Kousa Dogwood Seedling** 20-30' x same. Also referred to as **Chinese Dogwood**. Introduced by EH Wilson, Hubei, China, 1907. Horizontally spreading small specimen tree or large shrub covered with layers of 3–5" milky-white blossoms for up to 6 weeks in early summer. The pointed bracts give blossoms a starlike appearance followed by deep pink edible exotic fruit the size of ping-pong balls. Peel off the skin or simply squeeze it open and bite into the custardy pulp. The flesh is sweet, mild and reminds us of pawpaw. Tan, grey and faint orange exfoliating bark. Scarlet-orange-yellow fall foliage. Used up north as an alternative to the iconic southern dogwood tree, *C. florida*. Resistant to dogwood anthracnose and borer. Prefers light well-drained soils with an abundance of air and sun, but it'll tolerate shade and damper areas. Very adaptable. Native to China and Japan. Z4. (1-3')

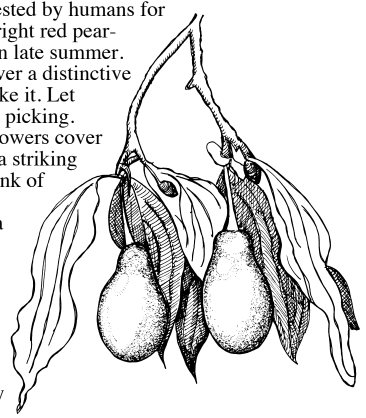
449A Kousa Dogwood, $16.50



Plant Sizes

All of our woody plants are well-rooted bare-root plants. Some shrubs may be a bit shorter than the specs given, and some hardwoods may be much taller. Because of the nature of living plants, size variations will naturally occur within each crop.

***C. mas* Cornelian Cherry** 20-25' x 15-20' Some of us at Fedco can't understand why more folks haven't caught on to the cornelian cherry. The fruits of this Old World gem, harvested by humans for thousands of years, are delicious bright red pear-shaped "cherries" that set heavily in late summer. Dense, chewy and sweet, they deliver a distinctive toothsome tang—there's nothing like it. Let them ripen to full sweetness before picking. Clusters of small delicate yellow flowers cover the leafless tree in early spring for a striking show before the forsythias even think of waking up. Long-lived large shrub with upright rounded habit makes a great hedge or can be pruned to a small tree. Nutritious, medicinal, high in vitamin C and good in jam, syrup, tarts, fruit leather and wine. The wood is hard and strong, once used for spears and wheel spokes. Prefers well-drained soil and full sun but otherwise adaptable. Likely to bear fruit in 2–3 years. Of the two cultivars listed, Fedco friend and consultant Tom Vigue says, "Pioneer may sound like the more worthwhile of the two, but I wouldn't be without Elegant. It is truly delicious. I believe having two cultivars improves pollination success." **Partially self-fertile**—plant multiples to improve yields. Native to Europe and Asia. Z4/5. **ME Grown.** (2-5')



***C. m.* 'Elegant'** Bred by Svetlana Klimenko, a Ukranian botanist at the Central Botanic Garden in Kiev. Selected for good fresh-eating flavor. Ripens around the third week of August in Maine. Picking window lasts between two and three weeks. Fruits are about 1¼" long with a very slender elongated shape. Soft flesh is tricky to pit so best eaten out of hand.

450A Elegant Cornelian Cherry, $27.50

***C. m.* 'Pioneer'** Another Klimenko intro with good flavor. More tart than Elegant but better for processing. Ripens around the first week of September in Maine, about one week after Elegant. Picking window lasts for three or four weeks. Fruits mature to about 1½" long and have a pronounced fat pear shape. Firm flesh is easy to pit.

451A Pioneer Cornelian Cherry, $27.50

C. sericea* Redosier Dogwood** 8-10' Formerly called ***C. stolonifera. Broad loosely rounded multi-stemmed shrub spreads freely by stolons (underground stems) and forms excellent hedges and borders. Most admirable in the winter when the masses of brilliant red stems contrast a backdrop of freshly fallen snow. Bring them inside and enjoy them for wreaths, arrangements and basket-weaving. By June, the stems are hidden by dark green foliage and sprinkled with tiny 4-petaled star-shaped flowers. Whitish berries in 2–3" clusters are popular with dozens of bird species. One of the most valuable of our native wildlife plants. Perfect for swamps, streams and wetlands. Very adaptable to a range of soils and climates, but generally likes wet conditions. Sun or partial shade. Fast growing and easy to transplant. To improve stem color, prune out older stems in the spring. Native to eastern U.S. Z2. **ME Grown.** (1-3')

453A Redosier Dogwood, $16.00
453B Redosier Dogwood, bundle of 5, $67.50

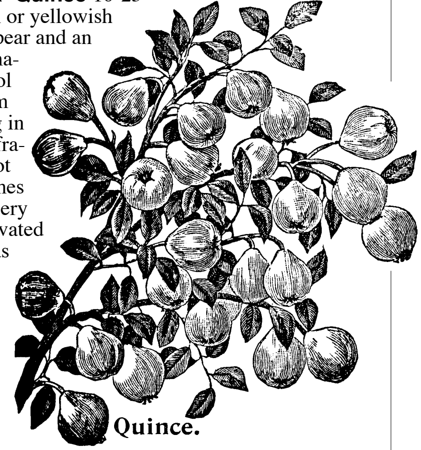
Cornelian cherry sherbet

According to Fedco's Aktan Askin, cornelian cherry "grows kind of wild and crazy in certain parts of Turkey. People make a sherbet (*not* a frozen treat) out of it, which is a cooked and diluted fruit juice drink." He passed along this simple recipe:

1 pound cornelians
1½ quarts water
½ cup sweetener (or to taste)

Simmer cherries in water for about 30 minutes, until soft. Adding a clove or two while simmering is common. Squeeze through cheese cloth. Chill, and enjoy. Just the color of this drink is very inviting.

***Cydonia oblonga* 'Aromatnaya' Quince** 10-25' A small tree with large aromatic tan or yellowish fruit shaped like a cross between a pear and an apple. Usually eaten in stews, marmalades and jellies. Fedco grower Carol Armatis gave us jelly she made from this cultivar, which she has growing in Newport. It was fantastic! Citrusy, fragrant with an orangey-pink hue—not like anything we've tasted. Sometimes added to hard cider. At one time, every Maine dooryard had a quince. Cultivated for millennia, the "golden apple" has quite the history: in ancient times, a gift to Greek brides on their wedding day; in colonial American homesteads, a staple pectin fruit; in Edward Lear's classic, the Owl and the Pussycat's picnic treat. Large white to pink flowers. Wood of mature trees becomes impressively gnarled and twisted. Similar soil requirements to other fruit trees. Plant in full sun and space 15–20' apart. Prune like an apple tree. Needs protection from apple borers. This hardy Russian variety was bred for disease resistance, yet is susceptible to fireblight. Ripens in October in central Maine; may not ripen in coldest areas. Not to be confused with Flowering Quince, the ornamental shrub *Chaenomeles*, which has smaller fruit. **Self-fruitful but** planting more than one will give better yields. Native to Asia. Z4/5. (3-6')



456A Aromatnaya Quince, $32.00

***Diervilla lonicera* Northern Bush Honeysuckle** 2-4' x 2-5' Also called **Dwarf Bush Honeysuckle**. Every time we've visited the Diervilla in grower Sharon Turner's garden, it's buzzing with bumblebees. Five little bright yellow petals on each tubular flower curl open and away, an invitation to insects, hummingbirds, butterflies and garden tourists. Clusters of flowers form in the axils of new growth. Extended-season bloomer. Long pointed lustrous dark green leaves emerge with a hint of bronze. Good for erosion control or mass planting. Bark, roots and leaves were used by native tribes as a diuretic and to treat eye problems. We've become fond of the wild specimens popping up around our homesteads. Full sun to light shade. Tolerates even the poorest soils, but if you want it to naturalize, give it rich moist soil. Pest and disease free. Native to eastern North America. Z3. **ME Grown.** (1-3')

457A Northern Bush Honeysuckle, $15.00

***Forsythia ovata* x *F. europaea* 'Meadowlark' Forsythia** 6-11' x same. ND St U, 1986. Welcoming everyone to spring, from Mile One on the Maine Turnpike to the potato prairies of The County, forsythia means the end of another long winter and the birth of color. Meadowlark is one of the most reliably flowering, with bud hardiness to –35°. Semi-arching habit, showy bright yellow blooms then healthy green foliage throughout the summer. Cut the branches in earliest spring before they flower, put them in a vase of water, and soon you'll have the first bouquet of the year. Don't be fooled by non-hardy imitations at the Big Box. If you want blooms above the snow line, shop at Fedco! Adaptable, prefers moderately fertile, slightly acid to neutral soils with good drainage. Best in full sun. Parentage from Korea and Europe. Z3. (1-3')

458A Meadowlark Forsythia, $14.25

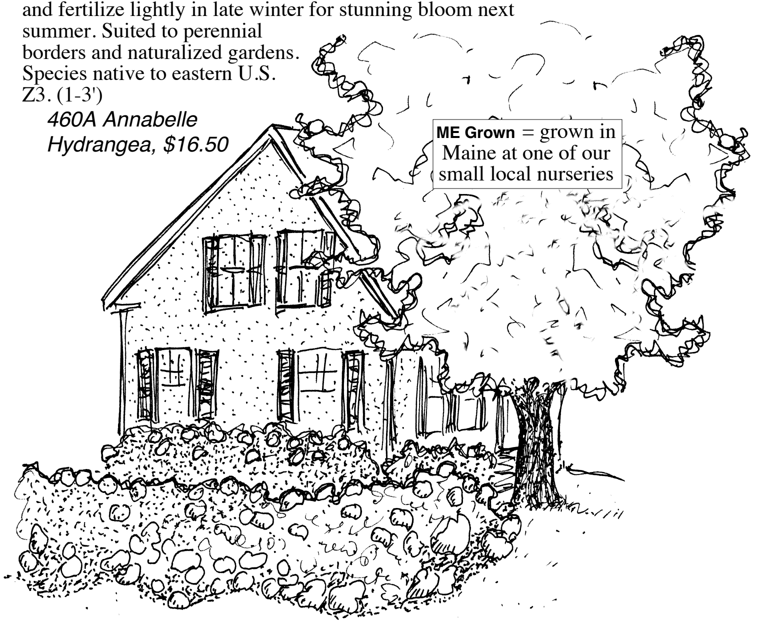
Forsythia was named for William Forsyth (1737-1804), Scottish superintendent of the Royal Gardens of Kensington Palace and author of *A Treatise on the Culture and Management of Fruit Trees*. For all his prestige as gardener to a king, Forthyth was deemed a charlatan by many of his contemporaries after he developed a secret recipe for a "plaister" or poultice to mend defects in trees. Forsyth's foul formula, made of lime, dung, wood ash, sand, urine and whatever, was discredited, and he was accused of passing damaged trees for healthy ones. This was a terrible scandal at a time when the British navy was paying handsomely for good oaks for ships to defeat Napolean. He died in disgrace, yet he still got a fabulous shrub named after him.

***Hamamelis virginiana* Witch Hazel** 8-20' x same. A small irregular rounded fall-flowering medicinal tree or large shrub. Makes a soothing astringent with a seemingly endless number of uses from controlling acne to soothing diaper rash, baggy eyes (yes!), poison ivy, chicken pox, even an unhappy lovelife. Thayer's Witch Hazel Astringent is still available in your local drug store. Most preparations involve simply brewing tea from the leaves and/or twigs. Oval hazel-like textured foliage. Brilliant golden-yellow fall color. Quirky yellow flowers appear in early to mid November. "Witch" is said to refer to the odd flowering time or maybe it's because dowsers like to use the interesting forked branches to "witch" for water. Full sun or shade. Prefers moist acid soils; avoid dry spots. No pests or diseases, does well with very little care. We do nothing to ours and it looks better and better every year. Native Canada to Georgia. Z3. **ME Grown.** (1-3')

459A Witch Hazel, $16.50

***Hydrangea arborescens* 'Annabelle' Hydrangea** 3-5' x same. Introduced by JC McDaniel, U of IL, 1962. Among the earliest of the hydrangeas to flower. Upright rounded shrub bears large pompom-like white flower clusters up to 1' across from late June till September. Arguably the most attractive cultivar of our native eastern species. Heart-shaped leaves are 5–6". Grows fast and suckers freely. If you're looking for a shrub to flower late summer in the shade, here you go. This selection was found by Harriet Kirkpatrick while riding her horse through the woods in Union County, IL. She noticed something special about the plant and later went back and dug it up with her sister. It was propogated and passed around to friends and neighbors in the town of Anna for years before McDaniel discovered it and later named it for the "two belles of Anna" who found it. Cut to the ground and fertilize lightly in late winter for stunning bloom next summer. Suited to perennial borders and naturalized gardens. Species native to eastern U.S. Z3. (1-3')

460A Annabelle Hydrangea, $16.50



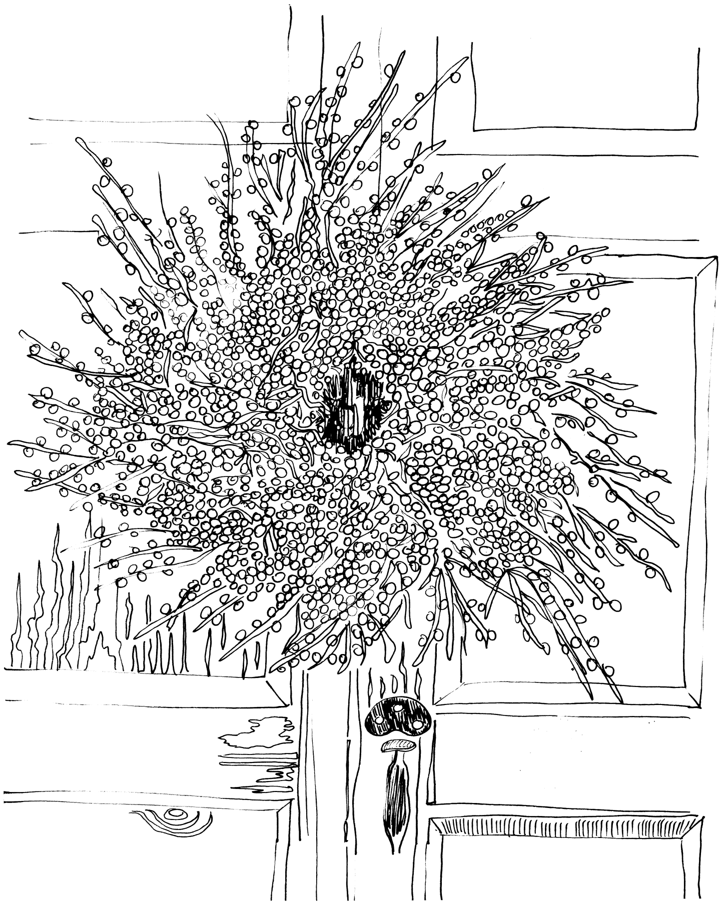
ME Grown = grown in Maine at one of our small local nurseries

How does all this pollination stuff work, anyway?

Self-pollinating, **self-fertile** and **self-fruitful** all mean the same thing. You can plant a self-fertile tree and expect it to pollinate itself and set fruit alone (for example, peaches, pie cherries, apricots). However, many self-fertile trees' fruit sets are enhanced with multiple plantings (elderberries and Amelanchiers). **Self-sterile** or **self-infertile** means that another tree of a different cultivar or variety is needed to set fruit (cross-pollinate). This is the case with most apples.

Monoecious (from Greek meaning 'one household') plants have their female and male parts on separate flowers both together on the same plant. In most cases, these plants are self-fertile, but not always! (Black walnuts are monoecious but the male flower releases pollen before the female flowers open, so having two plants is better than one).

Dioecious ('two households') plants have either all male or all female flowers on separate individuals. You would need to plant one female and one male to achieve pollination. When you buy unsexed seedlings, you generally have a 50-50 chance of getting one gender or the other (ginkgo, spicebush, bayberry, persimmon). **Bisexual** or **perfect** flowers contain both male and female components within the same flower. Some plants with perfect flowers will be self-fertile, some will not. Often, specific cultivars or varieties have perfect flowers but they cannot pollinate themselves and need other varieties to assist them (apples and blueberries).



Ilex verticillata **Winterberry** Also called **Black Alder**, **Fever Bush**, **Possumhaw**, **Swamp Holly** and more. Deciduous suckering medicinal holly with clusters of upright stems. Best known for profusions of bright red $^{3}/_{8}$" berries that stand out after the leaves fall—they keep their color all winter, spectacular against the snow. A staple of the Maine landscape, providing late-spring forage for birds. Lustrous deep green leaves retain their color long after they're cut for decoration. Richly foliated, but open enough to display interesting branch structure. Leaves used for tea and tonic, astringent bark used in herbal medicine. Tolerates dry conditions but prefers moist or wet acidic soil, even standing water. Sun or partial shade. No serious pests or diseases. **Male and female plants required for fruit**, which is produced on female plants. Plant males within 30' of females. Native from midwestern to eastern U.S. Z4. (1-3')

I. v. **'Afterglow'** 3-6' x 3-5' **Female**. Early bloomer with large orange-red fruit. Compact form with small glossy green leaves. Jim Dandy male is a suitable mate. Also pairs with Apollo male, which we've offered other years.

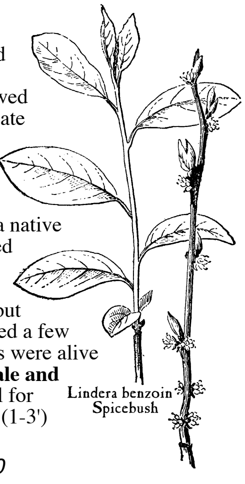
461A Afterglow Female Winterberry, $15.50

I. v. **'Jim Dandy'** 3-6' x 4-5' Smaller **male** selection to pollinate Afterglow. Will also pollinate Red Sprite female, which we've offered other years. One will pollinate several females. Small white flowers line branches in mid-July.

462A Jim Dandy Male Winterberry, $15.50

A few pruning guidelines:

- **Summer-Flowering Shrubs** should be pruned in late winter or early spring, before the new wood begins to grow. These shrubs blossom on the new wood they produce in the spring.
- **Spring-Flowering Shrubs** form flower buds in the summer, after they are finished blooming. Prune them immediately after their bloom is over. If you wait and prune them in the winter or following spring, you will likely remove many flowering buds.
- A common error is to prune or shear shrubs straight across the top. This encourages top-growth and the lower part of the shrub becomes woody and unsightly with less foliage. Proper pruning promotes growth at the base of the shrub.
- Observe your plants and see what they need. Some trees and shrubs benefit from aggressive pruning each year and might even respond well to being cut all the way back to the ground; others will respond by delaying fruit or blossom. Some plants thrive with little or no pruning.
- Overgrown shrubs with little foliage near the base may be rejuvenated by cutting canes down to the ground in early March, even though early blooms may be sacrificed that year. They will send forth new shoots in late spring and will be bushy with foliage clear to the ground. Pinch off tops when the desired height is attained. It usually takes two to three years to rejuvenate shrubs and hedges completely.



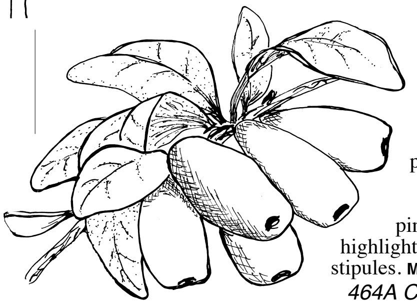
Lindera benzoin
Spicebush

Lindera benzoin **Spicebush** 6-12' x 8-12' Large rounded multi-stemmed native shrub suited to naturalizing in moist or wet areas, singly or in groups. Soft-yellow flowers early in spring followed by small clusters of glossy red berries by mid to late summer. Blue-green foliage turns golden yellow in fall. Edible berries and medicinal twigs and bark. Scratch the berries, foliage or stems and you'll know how it got its name: all three have a delicious lemony spicy scent and can be used as a native alternative to allspice. Leaves, twigs and fruit used in teas. Attracts bees, birds and butterflies. Prefers moist well-drained neutral or slightly acidic soils. Often found in full or partial shade, but at its showiest in full sun. We thought one had died a few years ago and dug it up, only to find that the roots were alive and ready to go. These are unsexed seedlings: **male and female plants required for fruit** so plant several for best results. Native to eastern U.S. Z5. **ME Grown.** (1-3')

463A Spicebush, $16.00

463B Spicebush, bundle of 5, $69.50

Lonicera caerulea **Honeyberry** Also called **Haskap** or **Edible Honeysuckle**. Our Canadian neighbors are crazy about haskaps, ramping up commercial u-pick orchards, exporting fruit to Japan, and making fun treats like honeyberry jam and ice cream. Medium-sized fruiting shrub is somewhat similar in bush and berry to our native highbush blueberry. Small dark blue oval fruit, very high in antioxidants, ripens in June around or just before strawberries. Extensive breeding has led to improved mild sweet flavor and larger fruit. In the Japanese Ainu language, *haskap* means 'lots of little things on top of the branches.' Productive plants bear at a young age with proper pollination. Ten pounds of fruit per plant is possible after a few years. Adaptable to most soils with a wide pH range (5.0–8.5). Fruits best in full sun. Extremely hardy. Low maintenance and disease free, though leaves may show sign of sunburn as season progresses. Native to Siberia and the Kuril Islands. Note pollination requirements below. Z2. (well-rooted transplants)



L. c. **var. *kamtschatica* 'Czech 17'** 6-8' Also called **Berry Blue** or **Berry Smart Blue**. Recommended pollinator for Indigo Gem, Tundra and Borealis (which we've offered in the past), will pollinate up to 8 plants. Introduced from the Czech Republic, Czech 17 has a different parentage from Tundra and Indigo Gem, which helps with pollination. Tart, but not too tart, the berries are plentiful, though smaller and less tasty than the varieties it pollinates. Good fresh or processed. Needs another honeyberry as a pollinator. Compared to other types it is quite ornamental, with lush green foliage and attractive upright pinkish-purple stems. Each leaf node is highlighted by vibrant coral-colored buds and stipules. **ME Grown.**

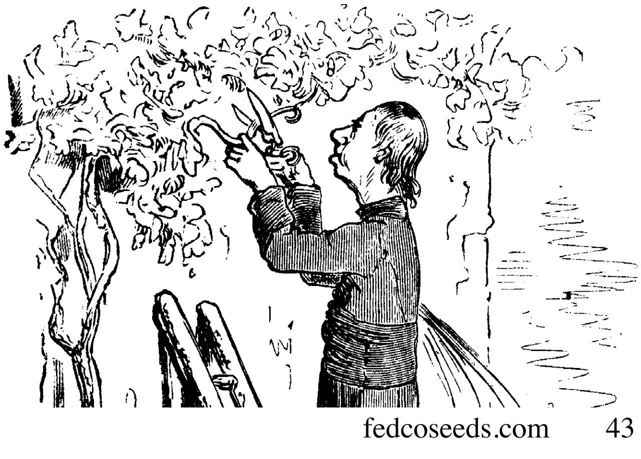
464A Czech 17 Honeyberry, $14.50

L. c. **var. *edulis* 'Indigo Gem'** 4-6' x same. U of Saskatchewan intro, 2007. An excellent variety for fresh eating. Sweet and slightly tangy with a chewier texture than the others. While Indigo Gem is smaller in stature than Tundra and Czech 17, it has been the most productive variety in our nursery trials. Even one-year plants only 10" tall had a decent crop of fruit last June! Leaves susceptible to mildew and sunburn late season after fruiting. Needs Czech 17 as a pollinator. **ME Grown.**

465A Indigo Gem Honeyberry, $14.50

L. c. **var. *e.* 'Tundra'** 4-6' x same. U of Saskatchewan, 2007. Decent-sized long flattish oval fruit is tangy and sweet. Firmer and somewhat sweeter than Indigo Gem. A four-year-old in the nursery bore abundant fruit for the first time this year. Drops when ripe. Needs Czech 17 as a pollinator. **ME Grown.**

466A Tundra Honeyberry, $14.50



***Malus* Flowering and Culinary Crabapples** A crabapple is any apple with fruit smaller than 2" in diameter. Crabs bear edible fruit, some more favorable for culinary use than others. Some have persistent wildlife fruit that hangs on the tree for weeks or even months. Others have hardly any fruit at all. The flowers, tree form and even the shape of the leaves can vary subtly or profoundly. Most are magnificent in bloom and are often ornamental year round, especially in winter when the leaves drop and the trees show off their interesting forms. Although crabs prefer full sun and deep well-drained soils of 5.5–6.5 pH, they are quite forgiving and will thrive in many locations with a little TLC. They don't like to be drowned or starved for water, and they *do* need to be protected from borers, mice and deer. See instructions on pages 69 and 70.

Most crabapples require little or no pruning except when a branch is broken or you feel compelled to shape your tree in one way or another. We like to encourage each tree to assume its own unique form.

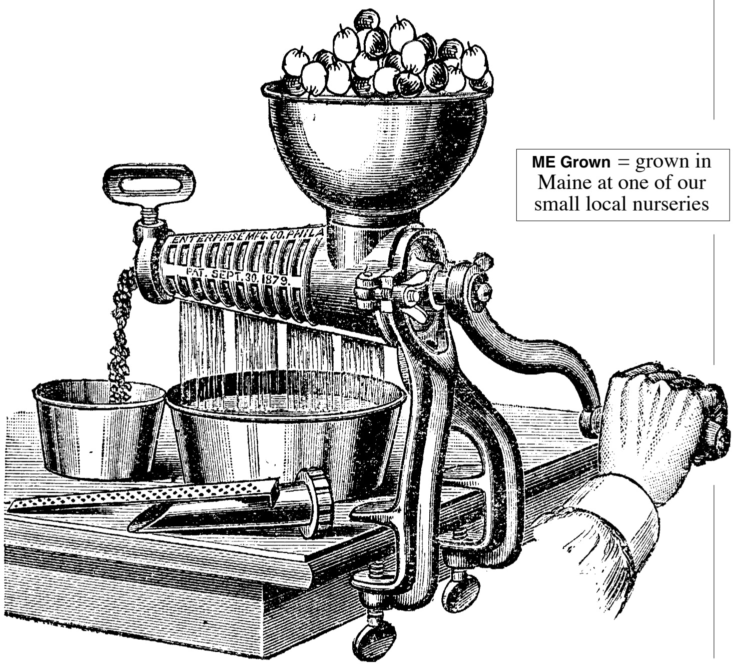
All crabapple trees need a second variety for pollination, but any apple or crabapple blooming at the same time, within $^1/4$ mile, will probably do.

Beverly 20x20' Morton Arboretum intro, Lisle, IL. Pink buds and beautiful single white flowers. Light green foliage. John Fiala in his classic *Flowering Crabapples: the Genus Malus* calls the showy clusters of persistent $^5/8$" red fruit "excellent." Upright spreading dense rounded tree form. Excellent resistance to scab, cedar apple rust and powdery mildew. Some susceptibility to fireblight. Z3-4. **ME Grown.** (3-6')

468C Beverly Crabapple on M111, $29.75

Brandywine 20x20' *M. ioensis* 'Plena' Klehm's No. 8 (*M.* x *purpurea* Lemoinei x *M.* Klehm's Improved) Incredibly beautiful fragrant flowers followed by unbelievably bitter fruit. Deep red buds open to small deep pink double rose-like blossoms. Put an arrangement of these flowers in a vase, and people will swear they are roses. One of the most fragrant crabs. Some growers will hate the unattractive 1–2" yellow fruit that drops in the fall and makes a mess. Cidermakers will love it. Very high in tannin. In *Cider Digest* a few years ago, one grower wrote, "You ought to try planting a crab called 'Brandywine'. WOW!!! what a real mouth-killer as far as tannin goes... Couldn't tell you the acidity because my tongue had gone dead." Loosely rounded tree. Blooms late. Z4. **ME Grown.** (3-6')

469C Brandywine Crabapple on M111, $29.75



ME Grown = grown in Maine at one of our small local nurseries

Dolgo 25x30' From seed collected by NE Hansen of *M.* x *robusta* in 1897 at the Imperial Botanical Gardens, St. Petersburg, Russia. (*Dolgo* means 'long' in Russian.) Introduced in the U.S. in 1917. *The* classic culinary crab still found in old Maine dooryards. Apricot-pink buds, large fragrant 2" pure white single flowers bloom early. Beautiful purple-red $1^1/2$" teardrop-shaped fruit makes flavorful clear ruby-red jelly. In recent years the aromatic very sweet, very acidic fruit has found favor with cidermakers. Great for canning, pickling and delicious sauce. Vigorous large blocky upright spreading tree consistently yields abundant summer crops. Dependable pollinator for all apples. Very hardy. Z2. **ME Grown.** (3-6')

471C Dolgo Crabapple on M111, $29.75

Gwendolyn 20x30' Seedling of *M. floribunda*. Arie den Boer intro, Des Moines, IA, 1944. Pink buds followed by masses of very large single pink fragrant blooms. 1" red fruit. One of the rare introductions by Arie den Boer, credited as being the father of the modern ornamental crabapple. The crabapple collection he assembled beginning in 1926 at Waterworks Arboretum in Des Moines is still one of the largest in the world, now known as the Arie den Boer Arboretum. Appears to be totally disease resistant. Z3/4. **ME Grown.** (3-6')

472C Gwendolyn Crabapple on M111, $29.75

Purple Prince 20x20' No 85-20-R2 (Bluebeard x Liset) John Fiala intro, Falconskeape, Medina, OH, 1970. Heavy annual blooms of single purple-pink flowers. Purple-bronze foliage. Half-inch blue-purple persistent fruit for the birds. Small round spreading slightly disheveled tree with nice open branch structure. Named when Prince Rogers Nelson was only twelve. Did Fiala have a premonition? Commemorate the pop legend right in your own backyard. No scab or other diseases. Hardy north of Minneapolis. Z3. **ME Grown.** (3-6')

474C Purple Prince Crabapple on M111, $29.75

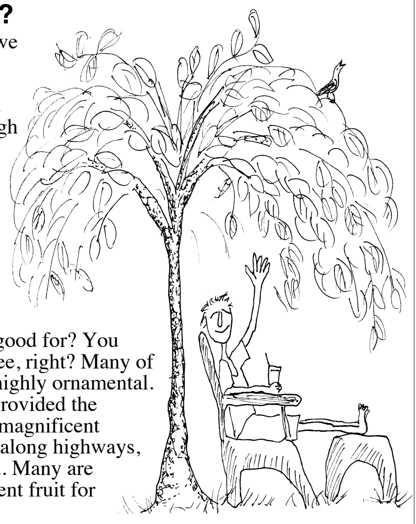
Radiant 25x20'. MN 6C (*M.* Hopa x open-pollinated) U Minn, 1957. Bright deep red-pink single flowers and bright red $^1/2$" fruit. Truly radiant in bud—an outrageous mass of large pink buds and no foliage. You'd think it was covered with fruit in May. Upright open rounded vase-shaped tree. Foliage opens purple-red and then fades to bronze. Susceptible to scab. Excellent fireblight resistance. Z3-7. **ME Grown.** ($2^1/2$-5')

475C Radiant Crabapple on M111, $29.75

Sargent Crabapple, Mt. Auburn strain 8-10' x 20-30' *M. sargentii* Arnold Arboretum, 1892. Seed collected in Hokkaido, Japan, by one of America's most famous horticulturists, CS Sargent. A species rather than a variety, many of the Sargents have been started from seed: hence the variability. This one comes from the front entrance of the Mt. Auburn Cemetery in Cambridge, MA. Densely and horizontally branched from the base with no tendency to develop a central leader. Barely 8' tall and more than 30' wide, a delightful jumble of twists and curves—like a dozen connected pretzels trying to out-pretzel each other. Pink buds and profuse pure-white fragrant single flowers seem to bloom forever. Very small dark red-purple persistent fruit. Disease resistant. Z4. **ME Grown.** ($2^1/2$-5')

476C Sargent Crabapple on M111, $29.75

What is a crabapple?



Most apple species are what we would all generally call crabapples. The fruit is small and not something you would necessarily want to eat. Though not particularly scientific, John Fiala's definition is the best one we've found: a crabapple is any apple under 2" in diameter at maturity. That would mean nearly all apple species around the world could be called crabapples.

What are all these species good for? You can't eat them fresh off the tree, right? Many of the small-fruited species are highly ornamental. A few of these species have provided the genetics for the thousands of magnificent flowering crabapples planted along highways, in parks and in your backyard. Many are covered each fall with persistent fruit for birds and other wildlife.

Crabapples are great for jelly and are extremely rich in phytonutrients and antioxidants. Cidermakers are seeking them out for their astringency, high sugar content and nutrient value. As we've become more familiar with the European cider varieties, it's interesting to see that many of the most famous of them are small enough to be called crabs. Some cidermakers are now fermenting juice from apples the size of grapes or even blueberries. In addition, some crabapples have broken loose from the chains of our lawns and have seeded themselves out in the wild. Sometimes they cross with the orchard apples to create new sorts of crosses. You can find those escapees along nearly every road, stone wall and field edge in rural New England.

Selkirk 20x24' Morden #457 (*M. baccata* x *M. pumila niedzwetzkyana*) Canada Ag Morden Res Stn. Bright rose-colored buds open to deep purple-pink single flowers. Dark green foliage tinted purple in spring. Very glossy deep red $^{3}/_{4}$" cherry-like fruit hangs on the tree until late October. Might be the brightest red crabapple fruit around! Upright-spreading form. Good resistance to disease. Probably hardy to Z3. **ME Grown.** (3-6')

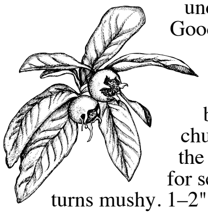
477C Selkirk Crabapple on M111, $29.75

Silver Moon 25x15' Probably *M. baccata*. Robert Simpson intro, Simpson Nursery Co, Vincennes, IN. White buds and dense masses of single white flowers. Spectacular in bloom. Flowers open very late, ten days after most other crabs, making it potentially useful to those searching for a pollinator for late-blooming apple varieties. Persistent fruit dark red $^{1}/_{2}$" fruit. Purple foliage and upright oval vase-shaped form. Disease free although may have some susceptibility to fireblight in high-disease areas. One of John Fiala's top-ten favorites. Probably Z3/4. **ME Grown.** (2$^{1}/_{2}$-5')

478C Silver Moon Crabapple on M111, $29.75

Crabapple Collection An assortment of 5 crabapples. Most will be from this year's catalog but a few rare surprises may be included. Rootstocks may be **semi-dwarf or standard**. Trees are individually labeled within each bundle. **ME Grown.** (2-5')

484C Crabapple Collection, bundle of 5, $137.50

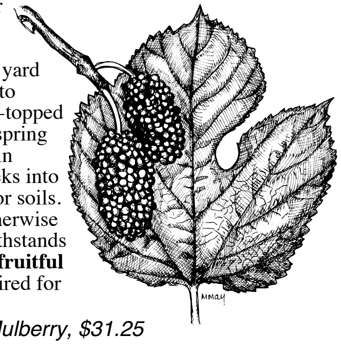


***Mespilus germanica* 'Breda Giant' Medlar** 12-20' Introduced in the Netherlands. Cinnamon-flavored spicy fruit shaped like a large rose hip, just under 2" in diameter. Very closely related to hawthorns. Good eating when ripe, thin-skinned with applesauce-like texture. Fruit cultivated in Europe and England since the Middle Ages or earlier, and still considered a culinary delight. One source recommends roasting in butter with citrus slices. Also makes good jelly, paste, chutney and "cheese." Fruit is hard when harvested after the first hard frost and must be bletted—allowed to ripen for several weeks in a cool place. Tastes best just before it turns mushy. 1–2" white flowers blushed with pink bloom May to June. Shiny green waxy leaves, a nice addition to the landscape. Begins bearing fruit 2–3 years after planting. One tree could bear 20 lbs of fruit once established. Plant in well-drained fertile soil, 9–10' from other trees. Full sun. Native to southeast Europe and Iran. **Self-fertile**. Z4/5. **ME Grown.** (2-5')

485A Breda Giant Medlar, $29.75

Make Space for Native Plants We love incorporating native plants back into the landscape. These plants are attractive, natural and beautifully suited to our growing conditions. They are also the best food sources for our butterflies, bees and other wildlife. Here are some you'll find in our catalog:

Amelanchier
Arnica
Bearberry
Birch
Blackberry
Black Cohosh
Bloodroot
Highbush Blueberry
Lowbush Blueberry
Butterfly Weed
Carolina Allspice
American Chestnut
Chokeberry
American Cranberry
Highbush Cranberry
Pagoda Dogwood
Redosier Dogwood
Echinacea
Elderberry
American Elm
Balsam Fir
Foxglove
Geranium
Goldenseal
Grape
Hazelnut
Honeylocust
Hophornbeam
Blue Flag Iris
Jack-in-the-Pulpit
Lingonberry
Sugar Maple
Mockorange
Mulberry
Nannyberry
Northern Wild Raisin
Oak
White Pine
Beach Plum
Raspberry
Redbud
Spicebush
Spruce
Trillium
Walnut
Winterberry
Witch Hazel
Yarrow



***Morus alba* x *M. rubra* 'Illinois Everbearing' Mulberry** 30x20' White County, IL, 1947. Sweet flavorful purple-black 1" blackberry-like fruit is delicious fresh, in sauces, pies, fruit leather or smoothies. What fruit you don't pick, the birds will. Great tree for viewing a huge variety of birds up close. Plant it next to the chicken pen where it will rain chicken feed into the yard for several weeks, or put down a sheet to collect the fruit as it falls. Dense round-topped tree is one of the last to leaf out in the spring and one of the first to set fruit. Ripens in mid-July and continues for several weeks into late summer. Fast growing, even in poor soils. Prefers moist well-drained soils but otherwise adaptable. Full sun to partial shade; withstands pollution, drought, wind and salt. **Self-fruitful** grafted cultivar, so only one plant required for fruit. Z4/5. (2-5')

486A Illinois Everbearing Mulberry, $31.25

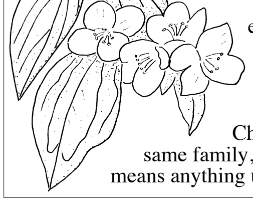
***Philadelphus lewisii* 'Blizzard' Mockorange** 4-5' x 3-4' COPF intro, Alberta, Canada. Medium-sized coarse upright loosely arching ornamental blooming shrub. A "blizzard" of sweet citrusy fragrance from pure-white slightly cupped 4-petaled blossoms for up to four weeks in late spring, after the lilacs fade. A spray of golden yellow anthers attractive to bees and butterflies accents each flower. Species was named after Meriwether Lewis who noted it in 1806 during the Lewis and Clark Expedition. Prefers moist rich well-drained soils but will grow well in most conditions. Full sun to partial shade. Since blossoms form on prior year's growth, best to prune after flowering. Similar to old-fashioned European *P. coronarius*, but this one is native to North America. William Cullina calls it "our most ornamental *Philadelphus* species." Z3. (1-3')

487A Blizzard Mockorange, $14.50

Ooh! Sweet Mockorange!"

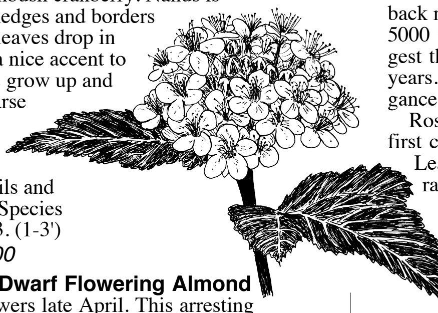
The species name is a clue, except when it's not.

The second word in a botanical name, the species name, or specific epithet, is typically an adjective that describes a feature or habit of the plant, like *plena*, which means 'double-flowering' or *purpurea*, which means 'purple.' The species name can also relate geographical information or include the name of a special person. The mockorange we offer is *Philadelphus lewisii*, the species name honoring Meriwether Lewis, who collected this wild specimen during his travels. Probably *lewisii* (pronounced lew-ees-ee-eye) is easier to say than *meriwetherii*.



Names can be real clues to a plant's characteristics or historical context. But like most things, once you memorize the rules you'll begin to see all the exceptions. Some plant names can be misleading. For example, *Salix babylonica* was named by Linnaeus when he mistook it for a tree referenced in the Bible. The biblical trees were poplars, and *Salix babylonica* is a willow from China, not Babylon. Both trees, however, are in the same family, *Salicaceae*. The point is, don't assume the name means anything useful. Keep investigating!

Physocarpus opufolius 'Nanus' Ninebark 1-2' x 2-3' Pink rosy buds form on this dwarf cultivar in early May and open up to creamy white inflorescences (called corymbs) consisting of dozens of tiny flowers, the kind pollinators love. Early flowers when not a lot else is blooming. Blooms turns to clusters of orangey-red fruit (seed capsules) adding more texture to the overall effect. Alternate roundish-ovate leaves have 3–5 lobes with a slightly serrated edge reminiscent of highbush cranberry. Nanus is good for small spaces, beautiful in low hedges and borders and useful for bank stabilization. When leaves drop in fall, exfoliating brown bark is exposed, a nice accent to the winter garden. Upright stiff branches grow up and out from a low center base. Leave as coarse habit or prune immediately after flowering to shape. Easy to grow with few maintenance needs or disease problems. Drought tolerant. Grows well in most soils and will tolerate clay, full sun to part shade. Species native Quebec to Virginia and inland. Z3. (1-3')



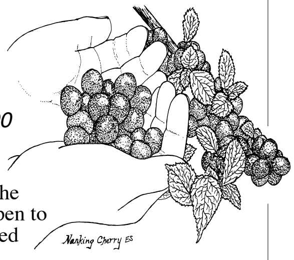
488A Nanus Ninebark, $15.00

Prunus glandulosa 'Rosea Plena' Dwarf Flowering Almond 5-6' x 3-4' Abundant 1" pink double flowers late April. This arresting little shrub caught my attention the first time I saw it against Carol and Rich's beautiful old house. I was even more surprised when Carol said it was an almond! Well, here it is, a first for our catalog but apparently an old standard. Not particularly fetching past May, but it's worth planting just for the early spring spectacle. Branches are nearly covered with the impressive blooms ranging all shades of pink. Spreading suckering habit allows it to naturalize. Shiny bright green foliage. Prune after flowering for better blooms the following year. Rich loamy soil, full sun to partial shade. Native to China and Japan. Z4. (1-3')

489A Rosea Plena Dwarf Flowering Almond, $14.50

P. maritima Beach Plum 6' x 5-6' Rounded dense suckering shrub found along ocean beaches, New Brunswick to the Carolinas. In spring beautiful showy white blooms cover the dark branches. Purplish-red 1/2–1" fruit in late summer. Excellent jams, sauces and especially jelly. Although typically found growing naturally in poor sandy soils, the plants thrive in well-drained fertile soils with a pH of 6–6.5. Additional fertilization will further increase productivity. We suggest an annual 5-gallon bucket or two of compost per plant. Prune to maintain an open center for good light penetration. Plant about 5' apart. Pollination requirements are uncertain—we recommend planting **at least two for good fruiting**. Salt tolerant! Native to eastern U.S. Z3. (1-3')

490A Beach Plum, $15.00
490B Beach Plum, bundle of 5, $65.00



P. tomentosa Nanking Cherry 6-10' x same. Broad dense highly ornamental fruiting shrub, becoming open and attractively irregular. One of the earliest flowering fruits every spring. Pink buds open to masses of fragrant white 3/4" flowers. Deeply veined light green foliage with very fine fuzz (tomentum) lining each vein underneath. Excellent hedge plant: an edible landscape crop that produces a lot of fruit that actually *is* edible! Variable 1/2" fruit in early summer ranges in flavor from mild to tart and in color from scarlet to clear red to pink and sometimes even white. Eat fresh or frozen. Excellent jelly and fruit leather. Said to make a good pie but pitting would require quite a bit of work. Covering plants with netting will deter birds from robbing your crop. Prefers full sun in well-drained soil. Can be susceptible to brown rot. **Plant two or more for pollination.** Native to China and Japan. Z2. (1-3')

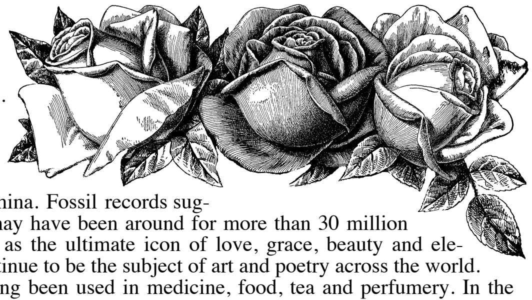
491A Nanking Cherry, $14.50

Special Plants for Challenging Locations

Drought Tolerant:
Amelanchier
Bearberry
Lowbush Blueberry
Carolina Allspice
Catmint
Cornelian Cherry
Chestnut
Elm
Grape
Hawthorn
Heather
Hens & Chicks
Honeylocust
Hophornbeam
Lavender
Lilac
Lingonberry
Ninebark
Peashrub
Beach Plum
Rosa Rugosa
Spruce

Wet Tolerant:
Amelanchier
Birch
Black Cohosh
Highbush Blueberry
Chokeberry
American Cranberry
Highbush Cranberry
Dawn Redwood
Redosier
Elderberry
Elm
Ferns
Blue Flag Iris
Marshmallow
Northern Wild Raisin
Spicebush
Willows
Winterberry
Witch Hazel
...or you could drain the swamp.

Shade:
Black Cohosh
Bloodroot
Pagoda Dogwood
Ferns
Balsam Fir
Goldenseal
Hazelnut
Hops
Hosta
Jack-in-the-Pulpit
Lady's Mantle
Sugar Maple
White Pine
Pulmonaria
Spicebush
Trillium
Blue Leaf Arctic Willow
Wintergreen
Witch Hazel



Rosa Rose

For millennia, roses have beguiled humans. The first cultivation of these flowers dates back more than 5000 years in China. Fossil records suggest that roses may have been around for more than 30 million years. Regarded as the ultimate icon of love, grace, beauty and elegance, roses continue to be the subject of art and poetry across the world.

Roses have long been used in medicine, food, tea and perfumery. In the first century, Pliny the Elder recorded more than 30 uses of rose medicine. Leaves, petals, hips and roots all have medicinal properties to treat a range of disorders from wounds to stomach problems. Rose hips are rich in vitamin C and make a wonderful "rose apple" jam; rose-petal elixir calms the nerves and lifts the spirit.

Each year, we aim to offer a diverse selection of unusual and antique varieties. If your favorite is not on the list this year, we may offer it in the future. Unlike hybrid tea roses, these roses are all vigorous, cold hardy and on their own roots rather than grafted. The antique varieties grow slowly compared to newer hybrids and tend to be more difficult to propagate. You may notice when you receive your order that some of these roses have small root systems and little top growth. Don't be alarmed by this—it's just the nature of these old varieties. We can attest that they perform just as well as the others. Native to temperate regions throughout the world. (9-18")

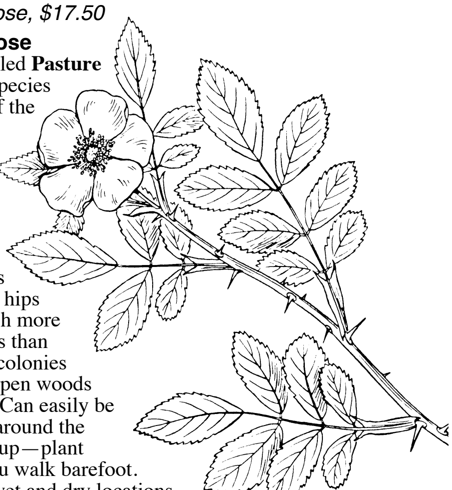
R. 'George Vancouver' 2-3' x same. [L83 x ([*R. kordesii* x D07] x 'Champlain')] Ag Canada, Ontario, 1995. Bred by Felicitas Svejda in 1983. A relatively small shrub and a very heavy bloomer of 2" double flowers, 24 petals each. Deep red buds open fuchsia-red and gradually soften to pink. Blooms until frost. Rich green disease-resistant foliage. Fall display of prolific red hips. Vancouver, the 18th c. Pacific coast explorer, also had a somewhat more well-known island named in his honor. Z3.

492A George Vancouver Rose, $17.50

R. alba 'Armide' 4-5' x 3-4' *R. alba* hybrid. Hybridized by famous rose breeder Jean-Pierre in Vibert, France, 1818. Rare antique rose with clusters of highly double 2–3" bright white strongly fragrant blooms. Buds emerge pink before opening, then bloom abundantly from solstice into early July. Medium-green coarse-textured foliage. Named after the sorceress Armida in Italian poet Torquato Tasso's 1581 epic *Jerusalem Delivered*. Z3.

493A Armide Rose, $17.50

R. carolina Carolina Rose 2-4' x 5-10' Sometimes called **Pasture Rose**. Our native eastern species found in every state east of the Great Plains. Single light pink 5-petaled flowers emerge May-June. Vigorous spreading canes are ideal for stabilizing banks, slopes and natural hedges. Even among fancier roses, the simplicity of this one is just right. Small bright red hips in fall. This species is much more resistant to foliage diseases than other roses. Often seen in colonies along streams, roads and open woods throughout New England. Can easily be kept in check by mowing around the edges, but runners do pop up—plant away from areas where you walk barefoot. Highly adaptable to both wet and dry locations. Full sun to partial shade. Z2.



494A Carolina Rose, $17.50

R. damascena 'Belle Amour' 4-5' x 3-4' Original parentage unknown. Introduced 1950. Discovered growing on a convent wall in Elboeuf, Normandy, by Nancy Lindsay. Highly fragrant myrrh-scented flowers. Semi-double cupped blooms have loosely crinkled soft salmony pink petals surrounding bright yellow stamens. The light shades of the petals resemble *alba* but foliage and thorns generally place it with the Damasks. Some place it with *gallica* hybrids. We recommend placing it in your garden. Z4.

495A Belle Amour Rose, $17.50

> There is little doubt that the Damasks have a close affinity to the gallicas; the more I delve into the complex lineage of roses, the more confused I become about them. As a mere grower of roses, I can only follow or attempt to follow, the rules laid down by others.
> –Peter Beales, from *Classic Roses*

***R. gallica* 'Belle de Crecy'** 2-4' x 3-4' Hardy, France, 1829. Origin and parentage unknown. Low-growing rose with strongly scented flowers. Crimson buds open pink and gradually turn violet then soft silvery grey from the outer petals inward around distinct green eye. Flat quartered double 3" flowers are in singles and clusters. Dark green leaves. Nearly thornless. Z4.

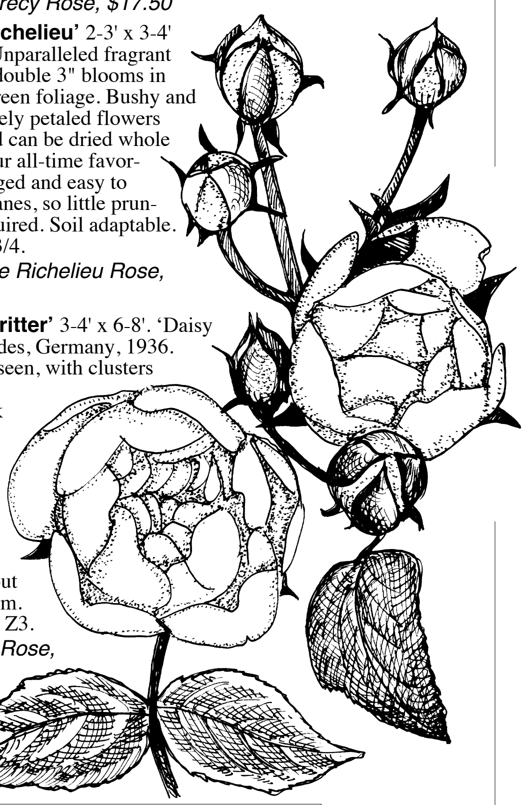
496A Belle de Crecy Rose, $17.50

***R. g.* 'Cardinal de Richelieu'** 2-3' x 3-4' Laffay, France, 1840. Unparalleled fragrant deep purple-burgundy double 3" blooms in midsummer. Smooth green foliage. Bushy and smooth stemmed. Densely petaled flowers hold their fragrance and can be dried whole for potpourri. One of our all-time favorites here at Fedco. Rugged and easy to grow. Blooms on old canes, so little pruning or maintenance required. Soil adaptable. Sun or partial shade. Z3/4.

498A Cardinal de Richelieu Rose, $17.50

***R. macrantha* 'Raubritter'** 3-4' x 6-8'. 'Daisy Hill' x 'Solarium'. Kordes, Germany, 1936. Unlike any rose we've seen, with clusters of unusual semi-double globular 2" silvery-pink flowers with a peppery fragrance. Spreading habit makes it ideal for slopes, banks or trailing over rock walls. Dark grey-green foliage is somewhat susceptible to mildew but not until well after bloom. Stunning in full bloom! Z3.

500A Raubritter Rose, $17.50



What's in a name? that which we call a rose
By any other name would smell as sweet.
–from Shakespeare's *Romeo and Juliet*

Old-fashioned Roses

Roses grown in Europe before 1800 are referred to as "Old World" roses, including the cultivars of *Rosa gallica* and *R. alba*. Their pink colors ranged from the deepest dark purple of 'Cardinal de Richelieu' to a faint pink blush like that of 'Chloris.' There were no reds among these antique roses and, though rich in fragrance, they bloomed only once per season. In the late 1700s red roses with repeat blooming tendencies were introduced from China, shifting the focus of rose breeding toward those traits. Demand for the aromatic and medicinal qualities of the Old World roses declined, supplanted by flowers that lasted long through the season. The hybrids created since the 1820s are called "modern" roses and are much more commonly seen in gardens today.

R. gallica is considered the oldest rose, steeped in history, legend and myth, and still grows wild in some places in the Caucasus, the mountainous region between the Black and Caspian seas, where it originated. Its exact origin is unknown but it can be traced back fourteen centuries when it was considered a symbol of love by the Persians. The aromatic petals hold their scent better than any other rose and have long been considered medicinal. This species contains hundreds of different cultivars, some very similar and others unique. Most have similar compact shrub habits and are generally very hardy. Most modern-day roses are presumed to be descendants of the *gallicas*.

The ***albas*** are almost as old as the *gallicas* and are also believed to have traveled west from the Caucasus with the Greeks and Romans. Many of the *alba* cultivars were bred in the 1800s in Europe. Though they flower only once, they should not be overlooked, as their beauty and fragrance are unparalleled by any modern rose. They are considered "tree roses" with tall canes that can be trained to fences, pillars and stonewalls, like climbers. Unlike many roses, ***albas* bloom on old wood**—if pruned too heavily, they can take years to flower again. Like heirloom apples, they are actually more disease resistant than many of the modern hybrids.

Rosa rugosa 4-6' x same. Also called **Japanese Rose** or **Beach Rose**. Vigorous spreading shrub with dark green wrinkled (rugose) leaves. Flowers range from deep pink to white. Large edible red hips up to 1" are good for jams, teas and fresh eating right off the bush. Deb Soule of Avena Botanicals uses rugosa petals in her much-loved Rose Petal Elixir. Considered by herbalists of Western, Chinese and Ayurvedic traditions to be rejuvenating and cooling. Blooms form on both old and new wood, so pruning necessary only to control size. Prefers full sun and well-drained sandy soil but also flourishes in fertile garden beds. Tolerates salt, pollution and drought; practically care-free. Native to China and Japan. Z2.

501A Rosa Rugosa, bundle of 5, $16.50

***R. r.* 'Magnifica'** 4-5' x 5-6' *R. rugosa* x Ards Rover. Dr. Walter Van Fleet intro, U.S., 1905. Large clusters of 3–5" loose double fuchsia flowers with showy bright stamens, spicy fragrance and 30 petals per bloom. Dense shrub with large glossy dark green foliage and a vigorous wide-spreading habit. Large orange-red hips. Very disease resistant. Walter Van Fleet (1858-1922) was a physician who dropped out of medicine at age 35 to follow his passion for plants. Twelve years later he introduced Magnifica, an unusual cross between a *rugosa* and Ards Rover (a fragrant red pillar rose from Ireland just introduced in 1898). From 1910 until his death, Van Fleet worked as a breeder for the USDA. Z4.

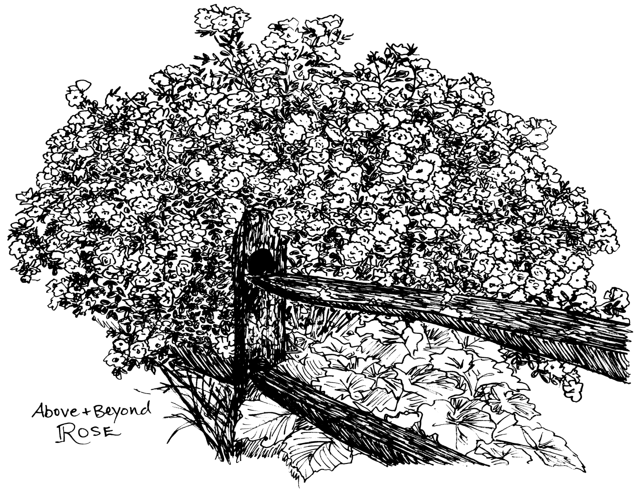
502A Magnifica Rose, $17.50

***R. r.* 'Moje Hammarberg'** 3-4' x 4-5' Hammarberg, Sweden, 1931. Extend your petal harvest with this early blooming *rugosa*. Large double 3" magenta flowers repeat throughout summer. Strongly scented petals loosely surround bright stamens. Large hips for making jams and preserves. Glossy dark green disease-resistant foliage. Low growing. Z3.

503A Moje Hammarberg Rose, $17.50

***R. virginiana* 'Above and Beyond'** 10-14' x 5-7' *R. virginiana* hybrid by Dr. David Zlesak, U of WI. First Editions intro, 2015. The climbing rose northerners have been waiting for! Double 3" apricot blooms on tall canes open bright and gradually lighten. Loose petals hug a crown of gold stamens. Repeat blooms from summer until frost. Canes are hardy, pliable and vigorous, making this a true climber. Can also be pruned to be freestanding. Glossy green foliage is fungal resistant. Zlesak's favorite rose seedling in his 30 years of breeding. His lifelong mentor, Elton Strack, collected in the wild the *Rosa virginiana* used for the cross. We are excited to offer this newer introduction for the first time. Z3.

504A Above and Beyond Rose, $17.50



Roses prefer full sun (at least 4–6 hrs per day) and a pH of 6.0–7.0. Space them 4–6' apart. They will do well in most well-drained soils with a good amount of organic matter. In locations with poor drainage, add gravel at the bottom of the planting hole, or build in drainage. Pick a site with good air flow, but avoid sites with cold northwest winds. Avoid competition with tree roots.

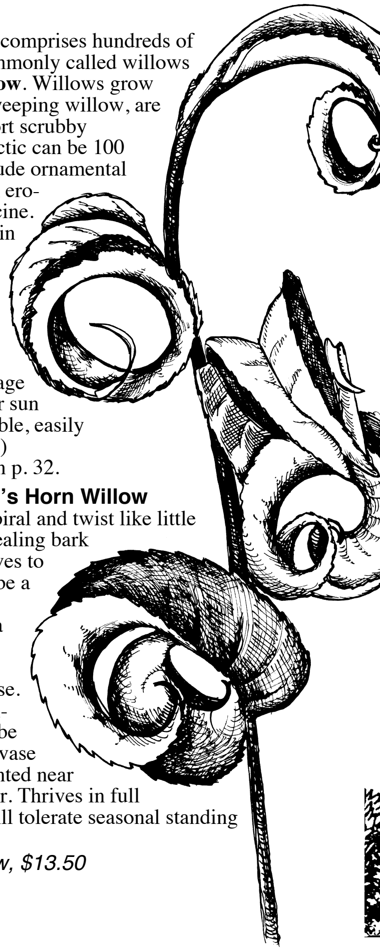
Plant roses as early as soil can be worked. Most roses' roots don't spread beyond the original hole, so dig a bushel-sized hole, as deep as 2' or more. We recommend lots of rotten hay in the bottom of the planting hole. Mix soil with liberal quantities of well-rotted manure and compost. Add a coffee-can full of rock phosphate or bone meal.

Soak roots in water overnight or up to 3 days before planting. Prior to planting, prune roses back to 3 canes, 2–5" tall. Plant them 1" below the level they were in the nursery. Add water as you fill in the hole to puddle it in. Mound soil around branches to prevent them from drying out, and to encourage buds to sprout. As the buds open, pull back the soil to the correct level.

Shrub roses and climbers will require little pruning in later years. Any pruning should wait until after the forsythia bloom. Remove dead or broken branches, and periodically cut out the oldest wood. Keep roses well mulched to retain moisture and reduce weeds. Add 2 shovelfuls of composted manure to each crown late in the fall.

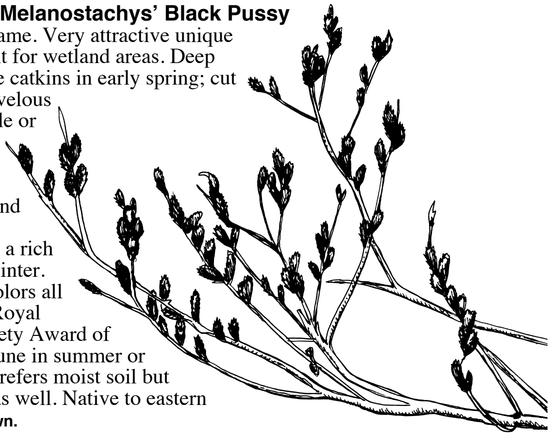
***Salix* Willow** The genus *Salix* comprises hundreds of different species of plants most commonly called willows but sometimes called **Osier** or **Sallow**. Willows grow all over the world. Some, like the weeping willow, are towering specimens. Others are short scrubby bushes—willows growing in the arctic can be 100 years old but only 2' tall! Uses include ornamental landscaping, shade, basket-making, erosion control, timber, fuel and medicine. All parts, especially the bark, contain salicin, used for relief of pain and fever for hundreds, or even thousands, of years. Aspirin is a synthetic analog of salicin. Willows feed local wildlife, insects and birds. We plant them near the orchard to provide early season forage for our native pollinators. All prefer sun and loamy wet soils, but are adaptable, easily transplanted and fast growing. (1-2')

Weeping willow can be found on p. 32.



***Salix babylonica* 'Crispa' Ram's Horn Willow** 30' x same. Tightly curled leaves spiral and twist like little ram's horns covering the stem, revealing bark and the silver undersides of the leaves to create a curious effect. Thought to be a 19th c. sport (mutation) of a classic weeping willow, it can grow to be a large weeper but is often severely pruned to a small upright shrub in order to enjoy its peculiarity up close. A good willow for coppicing or pollarding. The ornamental stems can be used in basketry or for forcing in a vase in early spring. Tolerates being planted near black walnuts. Vigorous fast grower. Thrives in full sun and in heavy damp soils and will tolerate seasonal standing water. Z4/5. **ME Grown.**

508A Ram's Horn Willow, $13.50

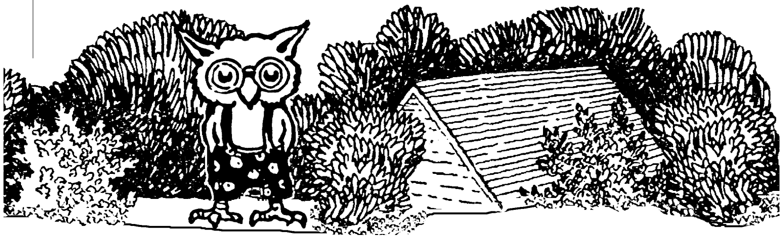


***S. gracilistyla* 'Melanostachys' Black Pussy Willow** 6-10' x same. Very attractive unique fast-growing plant for wetland areas. Deep purple-black male catkins in early spring; cut branches are marvelous for the dining table or kitchen windowsill. The rather short foliage emerges orange and then turns a deep green. Stems turn a rich purple-black in winter. Attractive dark colors all year. Winner of Royal Horticulture Society Award of Garden Merit. Prune in summer or fall. Adaptable. Prefers moist soil but will tolerate dry as well. Native to eastern Asia. Z4. **ME Grown.**

509A Black Pussy Willow, $13.50

***S. purpurea* 'Nana' Blue Leaf Arctic Willow** 3-5' x 3-6' Selection of Purple Osier. Medium-sized spreading shrub with small narrow blue foliage (actually greenish above and blue beneath) and delicate thin long red or green stems. The graceful thin stems sucker, layer and form a thick and highly attractive ornamental mass. Long cultivated and coppiced for a fine-textured basket-making material. Excellent bank or hedge plant, especially in wet areas but also quite suitable for a highly visible location. We've seen it looking great in a perennial bed. If it gets overgrown, cut it to the ground every couple of years and it'll come right back. Native Europe to North Africa to Japan. Z3. **ME Grown.**

510A Blue Leaf Arctic Willow, $13.50



Perfectly Imperfect

My personal therapy is wandering when I can around the fields and forest where I live, looking at plants and trees. I love gazing at the diverse flora, not just the interesting plants or the cultivated ones, but all of them, even the boring ones. Some of the trees that others call "trash," like the quaking poplars, are my favorites. They're kind of like the suckers and pickerel that live in our shallow lakes, fish that others toss out. That's an a-okay supper in my book. Although in late autumn I'll mow down the popple sprouts in the field, I want always to see the big ones rising above the tree line with leaves shimmering like silver coins. The way they catch the light is like nothing else in the forest.

At some point in my wandering, I realized most plants aren't perfect, meaning, they've been damaged in one way or another. Among my favorite things to inspect are the fallen trees that grow moss and tiny seedlings, and the hung-up ones, recently succumbed to windstorms. Winter swings through like an ax-wielding giant, snow and ice leaving wreckage in their wakes. It's the very rare specimen that isn't scarred, and most trees don't grow straight. Some graft to each other and some form funky curves and shapes that catch my eye. They plant themselves crooked and oddly spaced, yet they produce fruit. I'm amazed by the resilience of these beings and the creative ways they find to keep going. Life wants to live. Some of the best examples are the trees whose tops snapped under the pressure of the ice storms from the winter of '98. New buds emerged and the tops made a little jog over to one side and sent up new leaders, as if nothing happened.

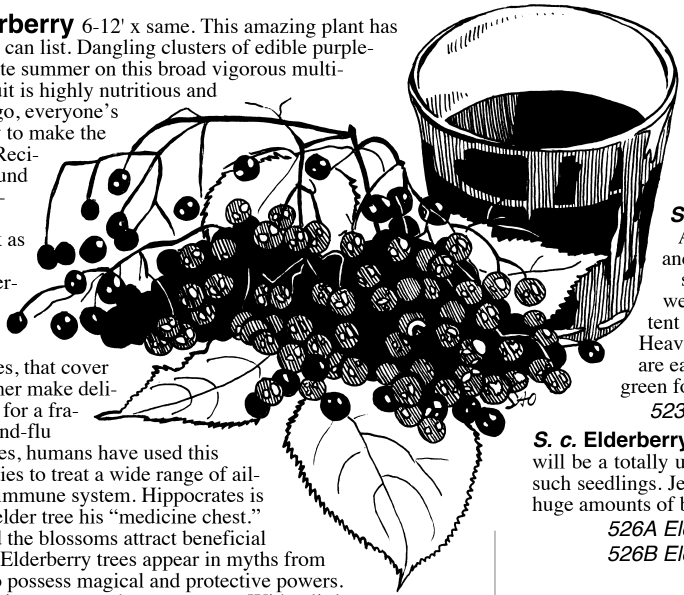
I've seen trees that died from transplant shock rise again, long after I've issued their death certificates. When I moved my favorite rose this spring, its few small buds fell off and died, and it sat there…dead. I was too sad to dig it up. Then, in early August, new leaves emerged and now it's thriving. How does this happen?

Porcupines have girdled the best of my peach trees. I was sure it was game over, but they rebounded, grew new bark and produced peaches for many more years. My old horse Chester was kind of like a pet moose. He got into a neighbor's hardwood stand once and chewed large patches of bark on the trunks of their most visible and seemingly perfect plantings. I was mortified but unable to fix the problem. A few years later, I had to look hard to find the damage.

The sugar bush is pocked with the damage of sugar maple borers. The beech stands are a mess. Come summer, Japanese beetles, tent caterpillars and other plagues make their livings in my yard. And so I play god and decide who stays and who leaves, but I never get them all. We live together in this imperfect landscape—I'm tired of being mad about these things.

I work at a tree nursery and grade trees for perfection. After all, most folks don't want a young tree that's shaped like a boomerang or the letter S, even if this is all a tree wants to be. Over the years, I've planted more trees than even our most enthusiastic returning customers, and most of what I've planted are the rejects from the season's crop. With few exceptions, all these culls have thrived. I don't baby them much and I'm bad about keeping up with soil tests. I'm cheap on amendments and my compost is ad hoc and unscientific. You would laugh if you saw the Brandywine crab I planted last spring: it looked like someone ran over it with a bush hog after letting their two-year-old prune it with a dull saw. It sat in its new spot for a while before sending out several incredible shoots that will someday soon make a wonderful shape. It's imperfect, and it'll do just fine.

–Jen Ries



***Sambucus* Elderberry** 6-12' x same. This amazing plant has more attributes than we can list. Dangling clusters of edible purple-black berries ripen in late summer on this broad vigorous multi-stemmed shrub. The fruit is highly nutritious and medicinal. A century ago, everyone's grandmother knew how to make the perfect elderberry pie. Recipes for jam could be found in all the old farm cookbooks. Elderberries are making a big comeback as folks rediscover the scrumptiousness of elderberry jelly, cordial, elixir and wine. The large creamy-white flower clusters, or cymes, that cover the shrub in early summer make delicious fritters. Dry them for a fragrant wintertime cold-and-flu remedy tea. For centuries, humans have used this plant's medicinal qualities to treat a wide range of ailments and to boost the immune system. Hippocrates is said to have called the elder tree his "medicine chest." Birds love the fruit, and the blossoms attract beneficial insects and pollinators. Elderberry trees appear in myths from days of yore, thought to possess magical and protective powers. Elderberries are low-maintenance and easy to grow. With a little attention, they will provide strong yields of fruit for several decades. **Considered self-fertile but** multiple varieties or or even multiple species will improve fruit set. Z3. (1-3')

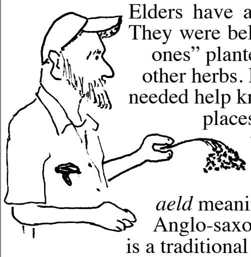
***S. canadensis* 'Adams No. 1'** NY Ag Exp Stn intro, 1926. Selected in 1915 from the wild by William Adams in Union Springs, NY, and sent to Geneva where it was introduced 11 years later. Large berries and fruit clusters make for easy and fast picking. If you're heading to a potluck and need to make a pie in a pinch, Adams is the shrub you want. Excellent for preserving and not bad fresh eating. Very large vigorous strong productive bush. Typically 7–8' tall.

514A Adams No. 1 Elderberry, $17.50

***S. c.* 'Goodbarn'** Chance seedling. Elwyn Meader intro, Rochester, NH. Professor Meader named this Goodbarn because it was the good elderberry growing under the eaves of his barn in New Hampshire. Another of the many fine plants Elwyn's son John has brought to our attention. Thanks, John! Hardy, vigorous with apparent self-fertility. It blooms heavily and produces large crops annually. Lower grower, maybe to 5'. **ME Grown.**

516A Goodbarn Elderberry, $18.00

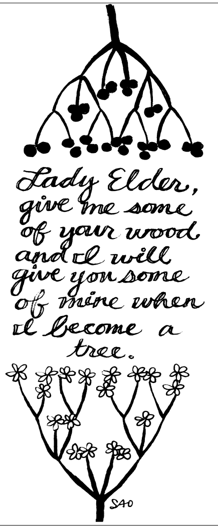
Garden Elders



Elders have a rich history in folklore around the world. They were believed to have spirits and were "the old wise ones" planted at the corner of the garden to look over the other herbs. In Celtic tradition people sat under her if they needed help knowing which herbal remedy to take. In some places the bush was believed to have the powers of transcendence and thought to be a portal connected to the underworld. The word *elder* is likely originally from the old English word *aeld* meaning 'fire.' Other sources say it comes from the Anglo-saxon *ellen*, which means 'fire-kindler.' *Sambuca* is a traditional flute made from the hollow stems.

Elderberries are best grown in rich soil with a pH of 5.5–7.5 but are adaptable to a variety of soil types. They love compost! Add compost to the hole at the time of planting and every spring after that. They prefer moist soil but will tolerate poor drainage and temporary flooding. On the St. Croix River, we've harvested elderberries from the canoe! Plant in full sun. Susceptible to borers when weeds are allowed to crowd the base. Control weeds by mulching with a thick layer of hay, leaves or woodchips. Aggressive weeding around elders will disturb their shallow roots and risk injury to the plant.

Pruning for *S. canadensis*: in spring, while plant is still dormant, prune away any weak, broken or dead canes. New canes will emerge. Fruit is produced on both new and old wood but best sets are on one- and two-year canes. Periodically cut out the oldest wood. Alternately, some people prefer to cut elders back to the ground each year and treat them as perennials. The latter plants will produce fewer but larger fruit clusters. (*S. nigra*, which we sometimes carry, fruits on second-year wood.)



Lady Elder,
give me some
of your wood
and I will
give you some
of mine when
I become a
tree.

***S. c.* 'Mattawamkeag'** Fedco intro, 2014. Selected and propagated by Sue Szwed and Mitch Lansky of Wytopitlock, ME. Sourced from a wide swath of plants growing between Wytopitlock and Bancroft in Aroostook County near the Mattawamkeag River. Sue and Mitch took cuttings from plants that are robust with consistently high fruit yields. **ME Grown.**

518A Mattawamkeag Elderberry, $18.00

***S. c.* 'York'** (Ezyoff x Adams No. 2) NY Ag Exp Stn, 1964. An old reliable, considered by some to be the largest-fruited and heaviest-bearing cultivar. In most of our Maine trials, this shrub is more compact than Adams, topping out at 4–5', but we've seen a 10' specimen growing on a compost pile. Persistent and will bear well for many years alongside other varieties. Heavy clusters of mildly tart large berries that ripen after Adams are easy to pick and excellent for jam, jelly, wine and pie. Bright green foliage on a rounded shrub. **ME Grown.**

523A York Elderberry, $17.50

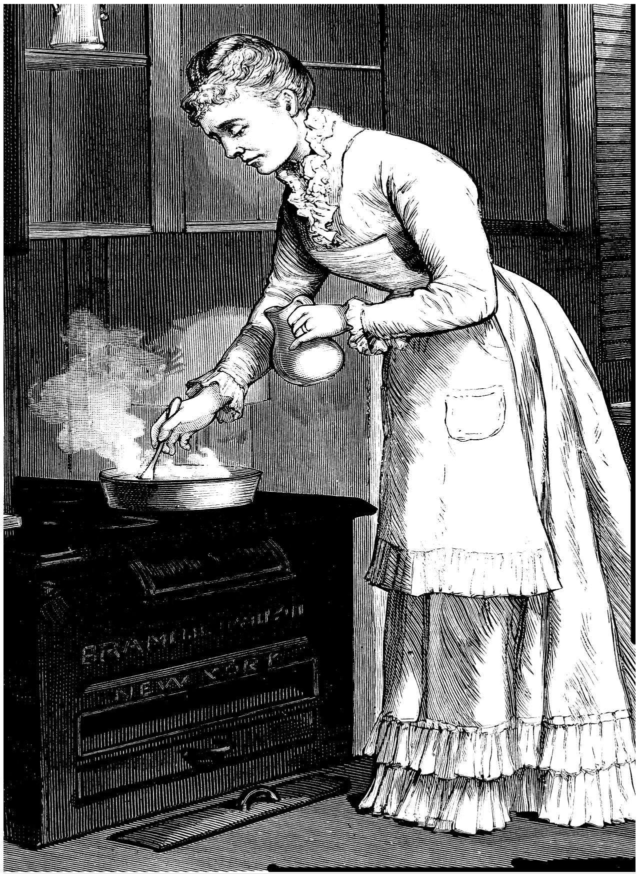
***S. c.* Elderberry Seedlings** Each one is grown from cold-hardy seed and will be a totally unique plant. Some of our best plants grew from batches of such seedlings. Jen has one that outgrew all of her other elders and provided huge amounts of berries in its second year. **ME Grown.**

526A Elderberry Seedling, $17.50

526B Elderberry Seedlings, bundle of 5, $75.00

***Spirea tomentosa* Steeplebush** 2-4' x same. Seeing this bonny little plant makes a heart leap with joy. Seriously, it's adorable, and we and the pollinators are obsessed with it. A must for every butterfly garden. Rosy pink steeples emerge as terminal spikes about 4–6" tall, appearing mid-late summer and lasting at least a month. Foliage is medium green, serrated with woolly undersides. Easy to grow. Likes average acid moist soils but not picky. Full sun or part shade. We've seen it emerge in newly cut woodlots on dry soil and thriving on pond edges in the north country, as single canes or in clumps with multiple blooms. No serious pest or disease issues. Lovely en masse. Native Nova Scotia to Georgia and inland. Z3. **ME Grown.** (1-3')

533A Steeplebush Spirea, $16.00



Before cooking, remove elderberries from their stems. This can be done while the berries are fresh or frozen. We pick and pack entire panicles of berries into plastic bags and put the bags in the freezer. Once frozen, remove and whack the bag with a stick. The berries will easily fall from the stems. Snip a hole in the corner of the bag and the berries will roll out. Freezing will not damage the fruit.

***Syringa* Lilacs** have been a fixture in the New England landscape for generations. More often than not, when we find old apple trees, the ancient lilacs are not far away. The large rambling suckering shrubs continue to flourish each spring long after the buildings have disappeared and all that remains of homesteads are the remnants of stone foundations. Why were the lilacs always planted just outside the kitchen door? On cold winter mornings, someone would clean out the wood stove and sprinkle ashes on the icy path to the backhouse. Or maybe the path to the woodshed or the clothesline. Over the years, the earth outside the kitchen door became saturated with lime. Lilacs love alkaline soil.

In the landscape, lilacs are excellent alone or in hedges. Deep green glossy heart-shaped foliage looks good from spring through fall. Intensely fragrant blooms in May over a period of several weeks. Hundreds of varieties have been developed over the ages. Flowers range from singles to doubles, pure white to the deepest purple, not to mention pinks and reds and lavenders of every persuasion. Ornamental, edible (frittered flowers à la elderberry), medicinal, and a great Mother's Day gift. (1-3')

***S.* x *hyacinthiflora* 'Mount Baker'** 8x10' *S. vulgaris* x *S. oblata dilatata*. Dr. Frank L. Skinner intro, Dropmore, Manitoba, Canada, 1961. Prolific single heavily fragrant lovely showy white blooms. One of Roger Luce's favorites. Roger was one of Maine's great 20th-c. plant people. His lilac collection near Bangor was unsurpassed for its time. John had the opportunity to observe this lilac in bloom during a visit with Roger many years ago. Of the lilac, Roger simply commented, "Lovely white." Indeed it is. Large shrub blooms about 2 weeks before most other lilacs. Extremely hardy. Z2/3.

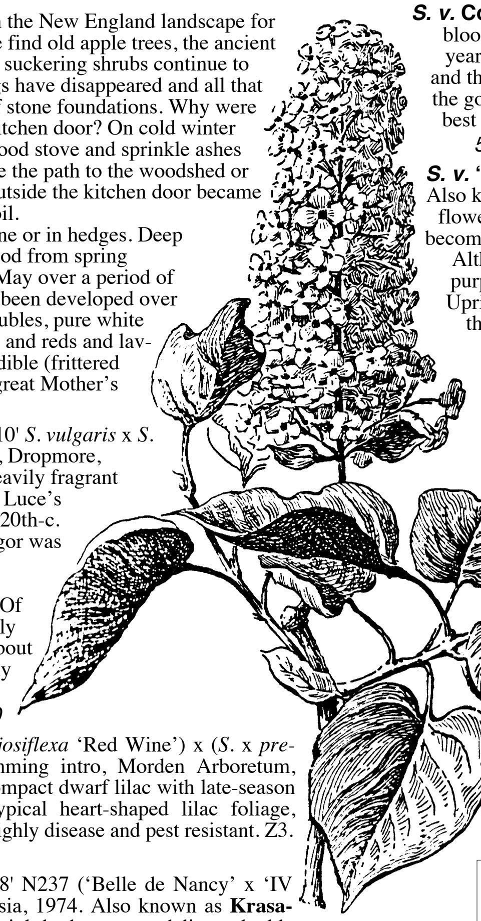
534A Mount Baker Lilac, $16.50

***S.* x *tribrida* 'Minuet'** 6-8 x 4-6' (*S.* x *josiflexa* 'Red Wine') x (*S.* x *prestoniae* 'Donald Wyman') William Cumming intro, Morden Arboretum, Manitoba, Canada, 1972. Low-growing compact dwarf lilac with late-season rosy single pink blooms. Unlike the typical heart-shaped lilac foliage, Minuet's leaves are oval and dark green. Highly disease and pest resistant. Z3.

535A Minuet Lilac, $16.50

***S. vulgaris* 'Beauty of Moscow'** 12x8' N237 ('Belle de Nancy' x 'IV Michurin') Leonid Kolesnikov intro, Russia, 1974. Also known as **Krasavitzka Mosky**. Dazzling pearly lavender-pink buds open to delicate double light pink-shaded white flowers. Described by John Fiala as "excellent in every way." Considered one of the best creations by one of the master hybridizers of the 20th c. Prolific vigorous upright plant. Later than other *vulgaris* types. Z2/3.

536A Beauty of Moscow Lilac, $16.50



***S. v.* Common Purple** 12-15' x same. A mass of medium-light purple blooms every year. A magnificent New England sight for nearly 400 years. When a nursery friend looked out John's living room window and thought he had some fancy new cultivar, he chuckled, "Nope, just the good old common purple." Never disappoints. Suckers freely, the best lilac for a spreading hedge. Z2.

537A Common Purple Lilac, $16.50

***S. v.* 'Ludwig Späeth'** 10-12' x same. Späeth Nursery, Berlin, 1883. Also known as **Andenken an Ludwig Späeth**. These deep rich purple flowers are always a knock-out. Dark but never so dark that the color becomes flat and the highlights lost. This is a magnificent deep purple. Although we hesitate to use the word red, there is enough red in the purple to give it a regal look. Single flowers on large upright spires. Upright growth habit. Will sucker over time. One of the very best of the very best. Z3.

538A Ludwig Späeth Lilac, $16.50

***S. v.* 'President Grevy'** 12-15' x 12' Victor Lemoine et Fils, Nancy, France, 1886. Lavender-pink buds followed by fragrant double light violet blue-tinted flowers on very large open pyramidal panicles. Columnar vase-shaped medium-thick growing habit. Suckers very little if at all. Blooms slightly later than another "blue" lilac, President Lincoln. Not as blue as Lincoln but still very nice. Dark green foliage. Named for the French politician Jules Grevy, president from 1879–87, distinguished for minimizing presidential power, confirming the establishment of the Third Republic, opposing French colonialism and opposing the demands for revenge against Germany following the Franco-Prussian War. Very hardy! Z3.

539A President Grevy Lilac, $16.50

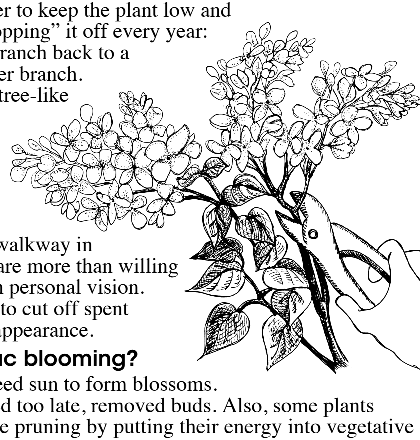
Syringa and *Syringa*

You might hear folks refer to Mockorange (*Philadelphus lewisii*) by one of its common names, syringa. *Syrinx* is Greek for 'pipe,' which relates to the hollow stems of both lilac and mockorange. Early blooming, fragrant and lovely, these two plants aren't even in the same family. *Philadelphus* belongs with the Hydrangeas, while *Syringa* is grouped with the Olives.

Lilacs are adaptable, easy to grow, nearly indestructible and practically maintenance-free. Plant them in a well-drained location in moderately rich soil. Sandy gravelly loam is perfect. They prefer at least 6 hours of sunlight each day. We suggest planting them with a shovelful of wood ash or lime, then add another shovelful of either every 3 years. A yearly mulch of manure or compost will encourage spectacular annual blooming. Pink, lavender and blue lilacs color up best in soil with a neutral pH.

How to prune lilacs

If you choose to prune your lilacs, do it right after flowering. Late-season pruning removes next year's buds. As the plant matures, prune off a quarter of the new suckers and the oldest growth (a few main stems each year). Some growers prefer to keep the plant low and bushy. Do so by "topping" it off every year: prune any upright branch back to a junction with a lower branch. Others prefer a tall tree-like form. Our friends Philippe and Danielle have let theirs soar to 8' or more, removing the lower branches and creating a magical walkway in the process. Lilacs are more than willing to cater to your own personal vision. Have fun! No need to cut off spent flowers except for appearance.

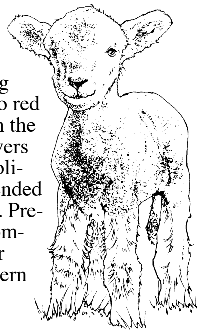


Why isn't my lilac blooming?

Too shady: lilacs need sun to form blossoms. Over-pruned: pruned too late, removed buds. Also, some plants respond to excessive pruning by putting their energy into vegetative growth instead of flowering. Too wet: lilacs like well-drained soil. Over-fertilized: lilacs will bloom well without assistance. Too much fertility can lead more vegetative growth and inhibit bud formation.

Viburnum cassinoides **Northern Wild Raisin** 5-6' x same. Also called **Appalachian Tea**, **Raisinberry** or **Witherod**. Rounded arching dense suckering native shrub. Creamy white flowers with yellow stamens on 2–5" flat-topped cymes bloom from spring to early summer. Highly desired for its multicolored edible fruit, which turns from green to pink to red to blue before finally turning black in September. One fruiting cluster may feature several colors at the same time. Best eaten when nearly dried out on the branch, if you can get to it before the birds! Foliage, once used in tea, emerges bronze or purple tinted, turning dark green when mature and then orange-red, dark crimson and purple in fall. *Withe* is from the old English meaning a tough, flexible twig used to bind things together. Witherod is pronounced *withe-rod*, not *wither-rod*. Good as a specimen but **plant more than one for fruit.** Sun to partial shade. Very rugged: adapts to dry or wet sites. Native to eastern North America. Z3. (1-3') **ME Grown.**

543A Northern Wild Raisin, $16.00



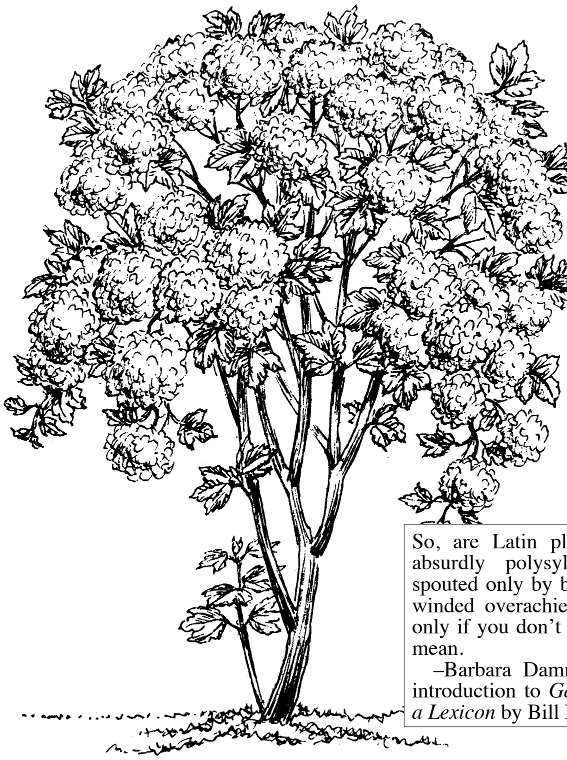
V. lentago **Nannyberry** 15-20' x 10-12' Also called **Sheepberry** or **Sweet Viburnum**. Large open vase-shaped suckering shrub with edible oval berries that turn from green to yellow to red to blue-black raisins that persist in winter and are popular with the birds. Large flat-topped clusters of fragrant creamy white flowers are a common sight in spring in the Maine landscape. Shiny foliage, purplish red in fall. Medicinal bark and leaves. Recommended for naturalizing, bird and wildlife habitat, screens and borders. Prefers moist well-drained average soils but adaptable to poor, compacted or dry soils. Sun or shade. **Self-fertile, but** plant two or more for better pollination and fruit production. Native to eastern U.S. and Canada. Z2. (1-3')

544A Nannyberry, $15.00

***V. opulus* var. *americanum* Highbush Cranberry Seedings** 8-12' x same. Formerly known as *V. trilobum*. Also known as **Crampbark**. Medicinal multi-stemmed native shrub. Clusters of 4" flat white flowers in May attract beneficial insects. Quite lovely in bloom. Pendulous bunches of red berries ripen mid-October, popular with dozens of bird species. Fruit is extremely rich in antioxidants and vitamins A and C. Although considered a wildlife plant, berries can be used for juice, jam, fruit leather and syrups—when boiling them down, don't let the somewhat unpleasant odor deter you. Bark is one of the most effective anti-spasmodic medicinals. Harvest bark in April or early May before leaves emerge by running a sharp knife down the long younger stems. Make tea or tincture to relieve cramping and muscle tension of various sorts. Good for screens and hedges. No two seedlings are exactly alike. Not only is it fun and exciting to see what you get, but it allows nature the opportunity to develop resistance and durability to insects and disease. Tolerates dry soils that are high in organic matter, but prefers rich moist well-drained soils, sun or shade. Soil pH 6–7. Susceptible to viburnum leaf beetle; check with your local extension office or nursery to determine if this could be a problem. Not the low-growing bog cranberry (see next page) familiar in sauces. Native to northeast U.S. and Canada. **Self-pollinating**. Z2. (1-3')

546A Highbush Cranberry Seedling, $15.00

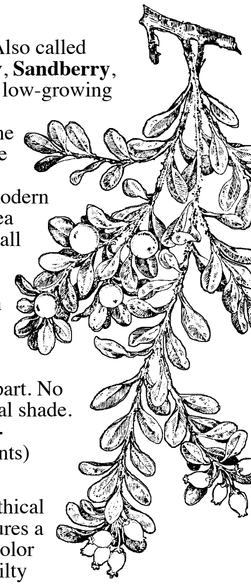
546B Highbush Cranberry Seedlings, bundle of 5, $65.00



So, are Latin plant names dry, absurdly polysyllabic nonsense spouted only by bumptious, long-winded overachievers? They are only if you don't know what they mean.

–Barbara Damrosch, from her introduction to *Gardener's Latin, a Lexicon* by Bill Neal

Groundcovers



Arctostaphylos uva-ursi **Bearberry** Also called **Kinnikinick**, **Hog Cranberry**, **Mealberry**, **Sandberry**, **Mountain Box** or **Bear's Grape**. Delicate low-growing beautiful glossy evergreen spreading groundcover. Beautiful in rock gardens. One plant can spread to 15'. Small pinkish-white flowers in spring. Leaves are diuretic, astringent and antibacterial. Used before modern antibiotics in treating urinary infections. Tea may also have value as a general tonic. Small bright red drupe-type berries color up in late summer and persist into winter. Too insipid for fresh eating, but good fried with fish. Prefers poor sandy infertile acid soils, tolerates salt. Can be sensitive to root disturbance, thus finicky in transplanting and may be slow to establish. Set plants 1–2' apart. No need ever to prune or fertilize. Sun or partial shade. Native to North America and Eurasia. **Self-pollinating**. Z2. **ME Grown.** (potted transplants)

L559A Bearberry, $15.00

Calluna vulgaris **Heather** Magical, mythical and medicinal evergreen groundcover features a spread of flowers and foliage that change color throughout the season. Heathers are our guilty pleasures—for every two you buy, we buy like 20 for our own gardens! Each year we vary our selection but always offer the hardiest varieties proven to flourish in northern climates. Revered in the British Isles, important medicinally in teas, honey, liniments and ointments. First fermented a few thousand years ago, used in gruit, ale, and might be the original ingredient for the first whiskey. Branches used in thatching, bedding, basketry, rope and broom-making. Flowers attract bees, butterflies and moths, especially when planted in masses. Recommended for rock gardens and edges of paths—or for opening the portals to the fairy world. Requires acidic soil and full sun to partial shade. Plant about 18" apart each way and let it spread. Mix peat into the soil to lower the pH if necessary—see planting instructions for cranberries and blueberries. We recommend pine needles as an acidic year-round mulch. Does not like high fertility or wet spots. Full sun and windy exposures intensify their colors. Shear every April for best bloom. Native to the dry forests, heaths and bare grounds of Britain and Ireland. More recently naturalized in North America. Z4. (4" pots)

C. v. **'Kerstin'** 12x18" Selection by Brita Johansson, Sweden. Downy grey foliage turns yellow up the stems and develops coral-pink tips mid-July. The unexpected coloration just before flowering make a subtle rainbow. Mauve flowers August to September. We planted some a few months ago that are already eye-catching.

L560A Kerstin Heather, $12.00

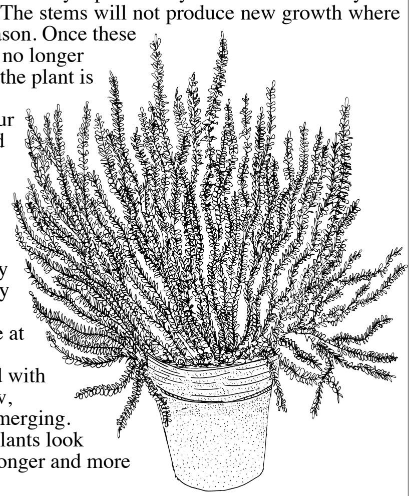
C. v. **'Wickwar Flame'** 1-2' x same. Archfield Nursery, 1970. Developed by George Osmond and named after his village in Gloucestershire, England. Lavender-mauve-pink flowers August through October. Summer foliage is glowing greenish-yellow with hints of orange, then orange in autumn and completely fiery red in winter. Mind-blowing. We planted ours near an oft-used path and recommend the same to you! Winner of the 1993 RHS Award of Garden Merit.

L561A Wickwar Flame Heather, $12.00

Shearing Heather

Heathers need to be pruned back every April or they will become woody and bare in just a few short years. The stems will not produce new growth where they flowered the previous season. Once these bare areas get leggy, they will no longer produce foliage at the base. If the plant is cut back to a woody base, no new growth will occur and your heather will be on a downward spiral. If you're not up for shearing, heathers might not be for you.

Shearing can be done with regular clippers like Felcos or with larger shears. Just roughly cut the stems below where they flowered the season before, leaving a few inches of foliage at the base. If done every year it should look like a little mound with a haircut. Next thing you know, bright new growth will start emerging. Shearing not only makes the plants look better but also makes them stronger and more resistant to fungal problems.

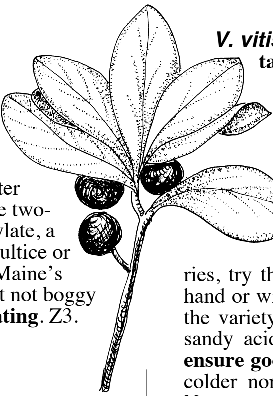


More Groundcovers

***Gaultheria procumbens* Wintergreen** Also called **Eastern Teaberry**. Herbaceous aromatic rhizomatous evergreen groundcover native to the woodlands of eastern North America. Glossy dark green elliptic-to-oblong leaves form on erect stems. Nodding bell-shaped waxy white flowers bloom from the leaf axils in June. Flowers give way to vivid red berries. Leaves will take on beautiful burgundy shades in the fall. Excellent winter food source for free-range chickens, partridge, turkeys, and some two- and four-legged mammals. Fragrant leaves contain methyl salicylate, a potent external anti-inflammatory, and can be used to make a poultice or massage oil to ease arthritic pain and sore muscles. Designated Maine's State Herb in 1999. Plant 16" apart in dappled shade in moist but not boggy woodland soil. Grows 6–10" tall with a 1–3' spread. **Self-pollinating**. Z3. (nursery-propagated $3^{1}/_{2}$" plugs)

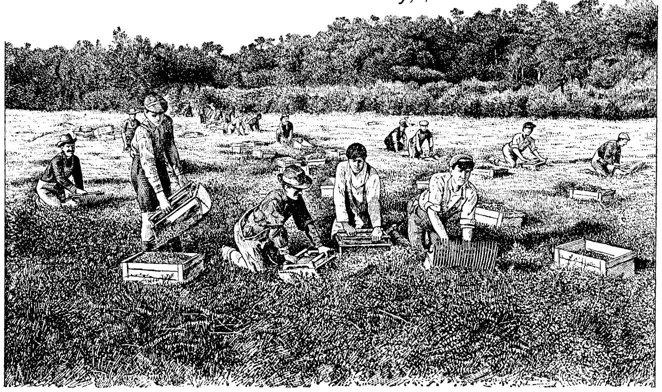
L562A Wintergreen, $8.00

L562B Wintergreen, bundle of 3, $20.00

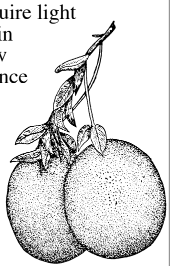


***Vaccinium macrocarpon* 'Stevens' American Cranberry** This is the cranberry of holiday sauces, bread and jelly. Dense low lustrous evergreen groundcover, reddish purple in fall and loaded with large red berries. Once established, makes a beautiful and edible "lawn." Handpick or rake like blueberries before hard frost. Use fresh, freeze or store in a cool basement or root cellar for months. Bitter and alkalizing effects make it one of the most common remedies for bladder infections. An excellent source of vitamin C. Annually flooded for frost protection and harvesting convenience in commercial operations, but not necessary in home plots. Adaptable to everything from bogs to dry rocky outcroppings. **Self-pollinating**. Native to northeastern U.S. and Canada. Comes in a bushy 6" clump which can be carefully divided or planted as a whole and divided in future years. Z2. **ME Grown.** (1-gallon pots)

564A Stevens American Cranberry, $20.00



American Cranberries are shallow-rooted and require light acid soil (pH 4.0–5.5), preferably cool, moist and high in organic matter, similar to soil in which blueberries grow well. Will grow in dry locations. Plant them in spring once the ground can be worked in a bed or in a naturalized setting.



We no longer recommend mixing in sulfur to acidify the soil. Sulfur is slow-acting and can be added to soil surface in subsequent years if necessary. Mixing it into the soil can damage tender young roots.

For a 5x5' bed:

For acidic "blueberry" soils: If you're fortunate to have a site where blueberries grow naturally, clear a spot of vegetation, cultivate the soil, add some peat and sand if you like, and you're ready to plant.

For sandy soils: Remove soil 10" deep and mix soil with 2 bales of damp peat moss. Replace mixture in bed and cover with 2" of sand.

For clay or silty soils: Remove soil 10" deep and place it around the edge of the bed as a berm. Replace the soil with a 50-50 mix of soil and peat (about 2 bales of peat). Cover with an additional 2" of sand. Plant cranberries 12" apart, so the roots are in the peat and the sand is covering the lower portion of the stems.

Remove all weeds as needed. Water the plants weekly so that the peat is moist but not saturated. Add nitrogen at a rate of $^{1}/_{3}$–1 lb (or 20–50 lbs of manure) per 100 sq feet each year. No pesticides should be necessary.

Handpick before first hard frost when berries are red.

In late fall, cover the bed to protect the plants from the drying effect of winter winds. Use a mulch of leaves or pine needles; or cover with polyester row cover and then clear plastic; or cover with row cover and then plenty of leaves. You may want to bait for mice under row cover or plastic.

Remove mulch in early April. Protect flower buds from 28° frosts by covering with plastic during frosty nights.

Every two years partially cover the plants with a $^{1}/_{2}$–1" layer of sand in spring before growth begins. This will help produce more berries and keep weeds down.

***V. vitis-idaea* Lingonberry** Also called **Foxberry**, **Cowberry**, **Mountain Cranberry**. Vigorous shallow-rooted spreading groundcover is related to blueberries and cranberries. Bright red glossy nutritious fruits are slightly smaller than lowbush blueberries. Tart until dead ripe, then has excellent flavor, richer and less astringent than cranberries. Can be eaten fresh but primarily used in sauces, jams, syrups, fruit leathers, juices and wines. Stores up to 2 months in the fridge. Small shiny dark green foliage is quite lovely. Adorable tiny bell-shaped white flowers in spring attract a plethora of pollinators. Extremely popular in Scandinavia and now catching on in the U.S. If you've got good soil for blueberries, try these. Ripens in late summer but is best after a frost. Harvest by hand or with a blueberry rake. Will produce 1–2 lbs per plant depending on the variety and can produce for up to 20 years. Prefers full sun and poor sandy acid (pH 4.5–5) soils. Plant 12–18" apart in rows 3–4' apart. **To ensure good fruit production, plant more than one variety**. Native to the colder northern hemisphere. Incredibly tough and very hardy. Grown in Newport, ME, by Carol Armatis of 3B Apiary. Z2. **ME Grown.** (potted transplants)

***V. v.-i.* 'Balsgard'** 12-15" tall. Swedish University of Ag Sciences intro, Balsgard, Sweden, 2004. Bred for high yields of very large deep-red berries. This vigorous upright slow grower is less sprawling than other lingons. Produces flowers in June and again in September, so may fruit twice in one season.

L565A Balsgard Lingonberry, $16.75

***V. v.-i.* 'Erntedank'** Up to 12" tall. Albert Zimmer intro, 1975. Collected in a wild heath near Uchte, Germany. Produces heavy yields of small- or medium-sized berries.

L566A Erntedank Lingonberry, $16.75

***V. v.-i.* 'Erntesegen'** 12-15" Collected by Zimmer from a German heath. High-yielding upright plant produces very large berries. Slightly acid sweet fruit.

L567A Erntesegen Lingonberry, $16.75

***V. v.-i.* 'Linnea'** 12" Swedish U intro, 1999. Cultivar selected from an open-pollinated seedling of Sanna, a wild strain. Berries are smaller than other cultivars, but this heavy cropper with high vigor produces good yields. Bears in late September or early October.

L569A Linnea Lingonberry, $16.75

***V. v.-i.* 'Red Pearl'** 12-18" Elden Stang intro, Holland, 1983. Very adaptable fast-growing upright plant produces large berries. Somewhat lower yielding, but standard in commercial production as an excellent pollinator.

L570A Red Pearl Lingonberry, $16.75

***V. v.-i.* 'Red Sunset'** 8-15" Hartmann's Plant Co intro. Medium-to-large firm flavorful berries. Considered one of the most vigorous cultivars.

L571A Red Sunset Lingonberry, $16.75

***V. v.-i.* 'Regal'** 8-15" WI-108, Univ of WI intro, Madison, WI, 1994. From open-pollinated seed collected in southwest Finland. Highly ornamental upright plant produces firm small-to-medium berries with good flavor. Vigorous.

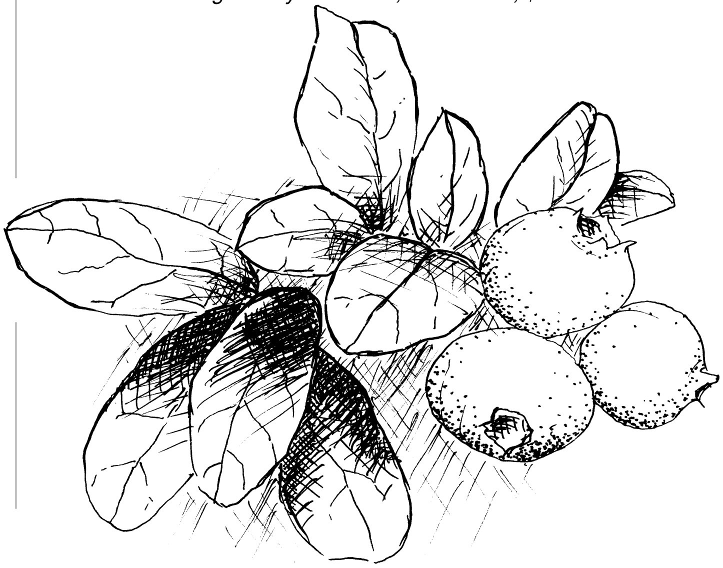
L572A Regal Lingonberry, $16.75

***V. v.-i.* 'Sussi'** 4-8" Sometimes spelled 'Susi'. Patented by the Swedish Ag Dept, 1985. Tall and spreading vigorous bush with moderate yields of medium berries that fruit on branch tips. Great pollinator for other varieties.

L573A Sussi Lingonberry, $16.75

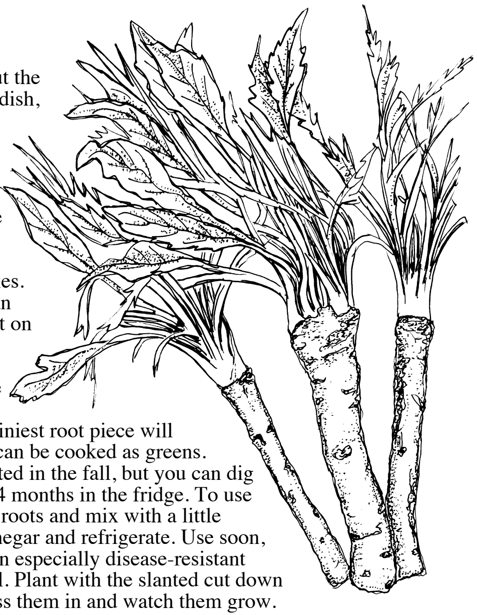
Lingonberry Collection Get your patch going and boost pollination with this collection of 5 plants, each a different variety chosen by Fedco.

576A Lingonberry Collection, bundle of 5, $72.00



Garden Roots

No garden is complete without the classic triumvirate of Horseradish, Asparagus and Rhubarb!

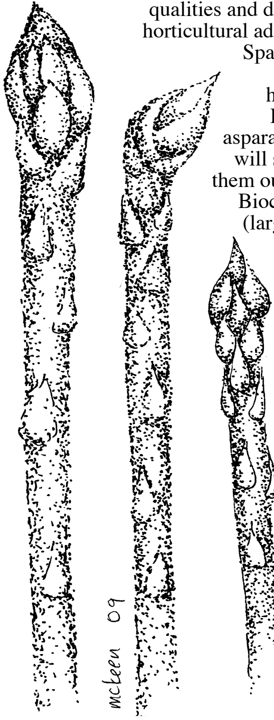


Armoracia rusticana
'Big Top' Horseradish
Exceptionally vigorous perennial with large dock-like leaves and spicy hot roots, savored for centuries for their culinary and medicinal qualities. Horseradish tea is said to be an effective control for brown rot on stone fruit. Deep taproot with numerous shallow runner roots. Choose carefully where you plant it because you may never get it all out. Even the tiniest root piece will produce a new plant. Leaves can be cooked as greens. Roots are traditionally harvested in the fall, but you can dig them anytime. Roots keep 3–4 months in the fridge. To use as a stimulant, grate the fresh roots and mix with a little lemon juice or apple-cider vinegar and refrigerate. Use soon, then make more. Big Top is an especially disease-resistant variety. Prefers moist rich soil. Plant with the slanted cut down and the flat side up, or just toss them in and watch them grow. Native to northern Europe. Z3. (roots)

L577A Big Top Horseradish, bundle of 5, $18.00

***Asparagus officinalis* Asparagus** A spring staple for millennia, may have originated around the Mediterranean Sea, perhaps in Asia Minor. The pharaohs, Greeks and Romans were all aware of its highly nutritious qualities and delectable flavor. The earliest known American horticultural advertisement, from March 1719, is for "English Sparrow-grass Roots."

Uncut shoots become a light green feathery hedge, a beautiful backdrop to a flower garden. Honeybees love the dainty dangling flowers of asparagus. Occasionally non–spear-forming females will show up in a planting. Leave them be or rogue them out as you wish. John visited friends who added Biochar to their soil. Wow, were their roots beefy! (large-rooted 1-yr crowns)



***A. o.* 'Jersey Supreme'** Early. Rutgers U. release in 2000, All-male hybrid that is more productive than the older all-male varieties. Excellent tolerance to asparagus rust and fusarium crown rot. Produces high yields of large-diameter tender spears in spring. Z4.

L578A Jersey Supreme Asparagus, bundle of 25, $25.00

***A. o.* 'Purple Passion'** Early. Developed from the Italian heirloom Violetto di Albenga. Brian Benson intro. Very large deep purple stalk with a creamy white interior. Purple asparagus is actually a type of white asparagus shown the light. Sweeter and less stringy than its green counterparts, so you can use more of the spear. Tender enough to eat raw in salads. Turns green when cooked. Z4.

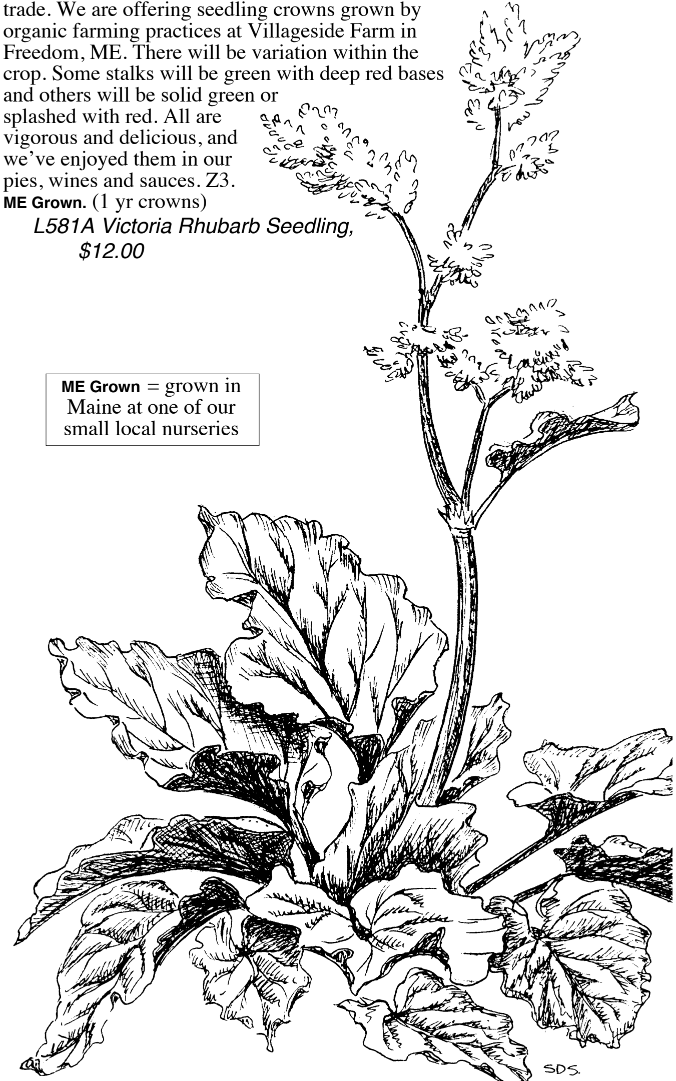
L579A Purple Passion Asparagus, bundle of 25, $25.00

***Rheum rhabarbarum* 'Victoria' Rhubarb Seedlings** Joseph Myatt intro, Manor Farm, Deptford, England, 1837. Heirloom variety. Named to honor the Queen, it was considered to be the most important rhubarb variety of the 19th c. Famous for early summer pie and wine, but also good in sauce, bread, juice, soup or cooked with meat and fish. Rhubarb's clumps of juicy acid leaf stalks were once a staple food. The root is a toning purgative herb traditionally used every spring for thousands of years. There are dozens if not hundreds of rhubarb varieties. May have originated in Siberia and been carried across Asia on the Silk Road to Turkey and then into Europe. Victorian cookbooks included rhubarb compotes, fools and charlottes. Eventually brought to North America through the efforts of Ben Franklin and John Bartram. Low-maintenance, will continue through summer if flower stalks are removed and new leaves allowed to grow. Leaves are *not* edible.

From our trials, we've learned that rhubarb rarely comes true to type when grown from seed, a fact often undisclosed in the nursery trade. We are offering seedling crowns grown by organic farming practices at Villageside Farm in Freedom, ME. There will be variation within the crop. Some stalks will be green with deep red bases and others will be solid green or splashed with red. All are vigorous and delicious, and we've enjoyed them in our pies, wines and sauces. Z3. **ME Grown.** (1 yr crowns)

L581A Victoria Rhubarb Seedling, $12.00

ME Grown = grown in Maine at one of our small local nurseries



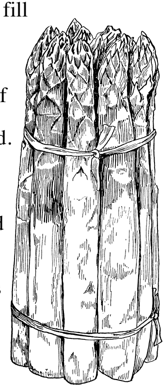
Asparagus

Plant when you receive your order or as soon as the ground can be worked. Requires fertile soil with pH 6.8–7.2 and high levels of phosphorus. Plant 14–18" apart, 6–10" deep, in trenches 4' apart. Or dig your trenches somewhat deeper and fill the bottom with 4" of compost and rotted manure. Lay plants with crown up and cover with 2" of soil. Plants emerge very slowly. As young shoots grow, add soil gradually, just covering the shoots, until the trench is full. In late fall, remove dead stalks and mulch with 3" of manure.

Second summer: Add lime, rock fertilizers and compost as needed. Control weeds but do not injure crowns.

Later years: Same routine but increase fertilizer. Be sure to leave some spears each year to grow stalks that will nourish the roots and give you more spears next year. Keep the bed weed-free and mulched heavily.

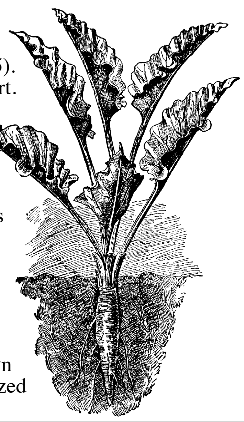
Harvest: New research shows that asparagus can be selectively harvested for 2 weeks during the second growing season, for 4 weeks in the third, and a full season thereafter. We recommend caution in harvesting too much too soon. Before the third or fourth season, harvest only the largest shoots from vigorous plants so the young plants can establish themselves.



Rhubarb

Plant the top of the root division level with soil surface in well-prepared well-drained rich slightly acid soil (pH 5.5–6.5). Space crowns 2–4' apart in rows 3–4' apart. Add a bushel of well-rotted manure or compost under each crown. When plant is established, fertilize liberally with manure and balanced garden fertilizer or compost every spring, as it's a heavy feeder. Harvest for 4 weeks 2 years after planting. Thereafter you can harvest for 8–10 weeks each year. Never remove more than 2/3 of the stalks from a plant. Water during dry spells for extended season.

Every 10 years or so, divide plants in early spring, leaving about 1/3 of the crown in place. Cut up the remainder into fist-sized pieces and replant.



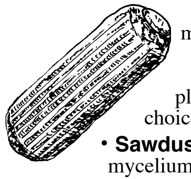
Mushroom Spawn

Many of us are crazy about mushrooms. We love hunting for them in the damp forests during spring and fall, cooking them, tincturing them or just admiring their mysterious beauty. People have cultivated mushrooms for thousands of years. Around a century ago, American seed catalogs offered mushroom spawn bricks for 30¢ each, right there between the melons and the mustard.

We're excited to collaborate with North Spore Mushrooms to offer the following selections for you to get started on your own fungus garden. These products are all **Maine-grown** without pesticides, on natural substrates. Available as plug spawn and sawdust spawn. All can be refrigerated until you are ready to start growing. We send detailed instructions with your order and you can find more info about each item on our website. We ship mushrooms and tools in April during our regular shipping season. If you're a beginner, consider starting out with a kit.

Mushrooms

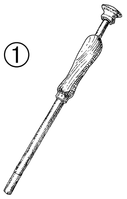
For each type, we offer one or more of the following options:



- **Plug Spawn** Small wooden dowels colonized by mushroom mycelium. 50 plugs will inoculate a single 4' long, 4" diameter log. Drill 5/16" holes (or 8.5mm with angle-grinder adapter) into your log, hammer in the plugs and seal the holes with wax. Plugs are an excellent choice for beginners. **Plugs come in bags of 100 or 500.**
- **Sawdust Spawn** Hardwood sawdust colonized by mushroom mycelium. **Each bag contains 5½ lbs of inoculated hardwood sawdust**, enough for about 25 logs. Drill 12mm holes in your logs, pack the sawdust using an inoculation tool and seal with wax. Good for commercial mushroom growers. Note: Only Wine Cap may be grown on hardwood sawdust in garden paths. Almond Agaricus can be mixed into compost for the garden. All other types are grown on logs.
- **Plug Kits** A kit contains 100 plugs, a small block of wax with dauber, 5/16" drill bit and instructions. Everything but the log, drill and hammer to get you started growing mushrooms. Available for all types except Almond Agaricus, Chicken of the Woods and Wine Cap.
- **Countertop Kits** Grow mushrooms in the kitchen on this inoculated sawdust loaf! Simply slice open the bag, and keep in a humid environment, like beside the sink. Mushrooms should start to produce "pins" within two weeks and will grow quickly. Each kit contains a 5-lb inoculated sawdust block that could produce up to 3 lbs of mushrooms over 2–4 months. Instructions included. Available for Grey Oyster, Golden Oyster, Lion's Mane and Shiitake. The easiest way to get into growing mushrooms. Makes a great gift.

What You'll Need

These mushrooms will fruit best on hardwood logs or sawdust. Instructions will include recommended log species lists. Depending on the product you choose, you will need to provide your own hammer and drill. Here are a few tools to help you get a head start:

①


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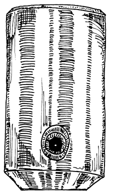

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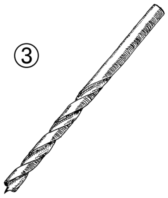

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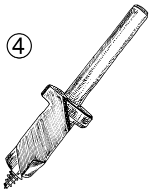


① **Inoculation Tool** A simple hand tool for rapid inoculation of hardwood logs with sawdust spawn. (Not needed for plug spawn.) Use with 12mm drill bit holes for best results.

L584A Inoculation Tool, $40.00

② **Angle Grinder Adapter** Used to attach a drill bit to an angle grinder to increase speed on large projects. Fits 5/8" spindle and takes both 12mm and 8.5mm drill bits.

L585A Angle Grinder Adapter, $50.00

③ **5/16" Drill Bit** Low-speed drill bit for small-scale plug-spawn projects.

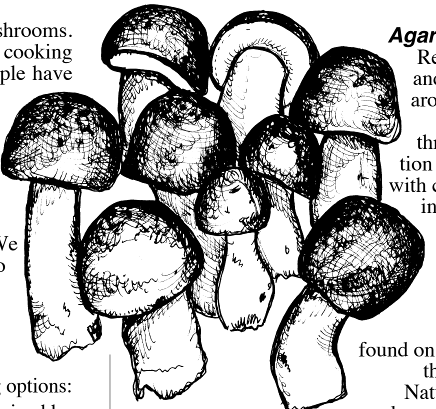
L586A 5/16" Low-Speed Drill Bit, $7.00

④ **High-Speed Drill Bits** Specifically made for log inoculation, designed to clear the hole of sawdust as it drills to a set depth that matches plug length or sawdust dosage. For large projects, we recommend an angle grinder adapter with an 8.5mm bit for plug spawn or a 12mm bit for sawdust.

L587A 8.5 mm High-Speed Drill Bit with Stop Collar, $20.00
L588A 12 mm High-Speed Drill Bit with Stop Collar, $20.00

Sealing Wax A clear food-grade cheese wax ideal for sealing holes in inoculated logs. One pound of wax is enough to seal about 10 logs. Sealing the holes is critical to success because it protects the spawn from drying out and from contamination. Wax is in granular form.

L589A Sealing Wax 1 lb., $6.00



***Agaricus subrufescens* Almond Agaricus** Related to the well-known portabella, crimini and button mushrooms but has its own unique aroma and flavor reminiscent of almonds. The species grows on composted material and thrives in warmer temperatures. A great addition for the home gardener, can be incorporated with compost into vegetable and perennial plantings and does well in season-extension structures. (Available as sawdust spawn only.)

590C Almond Agaricus Sawdust Spawn, $20.00

***Hericium erinaceus* Lion's Mane** Pure white cluster of icicle-like teeth, often found on beech and birch in the wild. When cooked, they have a consistency similar to crab meat. Naturally fruits during cooler months. Due to a slower colonization rate, a higher inoculation rate should be used. Can be grown on many different hardwood species, large- or small-diameter logs.

L591A Lion's Mane Plug Spawn, bag of 100, $15.00
L591B Lion's Mane Plug Spawn, bag of 500, $32.00
591C Lion's Mane Sawdust Spawn, $20.00
L591D Lion's Mane Plug Kit, $25.00
591E Lion's Mane Countertop Kit, $25.00

***Laetiporus sulphureus* Chicken of the Woods** Large bright orange fruit bodies have a texture reminiscent of chicken. Great in soups and stir-fries. Fruits all season from late spring into late fall. Prefers large-diameter oak logs. (Not available in kits.)

L592A Chicken of the Woods Plug Spawn, bag of 100, $15.00
L592B Chicken of the Woods Plug Spawn, bag of 500, $32.00
592C Chicken of the Woods Sawdust Spawn, $20.00

***Lentinula edodes* Shiitake** Brown umbrella-shaped spongy caps, very nutritious and medicinal. Good for drying and reconstituting in winter soups. Meaty texture when cooked. Grows best on oak and maple. Fruits throughout the growing season and responds well to commercial forced-fruiting production methods. This is the Wide Range Shiitake strain.

L595A Shiitake Plug Spawn, bag of 100, $15.00
L595B Shiitake Plug Spawn, bag of 500, $32.00
595C Shiitake Sawdust Spawn, $20.00
L595D Shiitake Plug Kit, $25.00
595E Shiitake Countertop Kit, $25.00

***Pleurotus citrinopileatus* Golden Oyster** Tropical oyster strain that thrives in warm weather. Produces beautiful clusters with yellow caps that are a favorite at farmers markets. Grows well on many different hardwood species including oak, maple and poplar.

L596A Golden Oyster Plug Spawn, bag of 100, $15.00
L596B Golden Oyster Plug Spawn, bag of 500, $32.00
596C Golden Oyster Sawdust Spawn, $20.00
L596D Golden Oyster Plug Kit, $25.00
596E Golden Oyster Countertop Kit, $25.00

***P. ostreatus* Grey Oyster** Very popular fleshy firm edible grey-white oyster-shaped caps often found growing on old dying maple trees. Our most productive oyster strain. Reliable and cold tolerant, fruits prolifically in early spring or late fall. Grows well on many different hardwood species including oak, maple and poplar.

L597A Grey Oyster Plug Spawn, bag of 100, $15.00
L597B Grey Oyster Plug Spawn, bag of 500, $32.00
597C Grey Oyster Sawdust Spawn, $20.00
L597D Grey Oyster Plug Kit, $25.00
597E Grey Oyster Countertop Kit, $25.00

***P. pulmonarius* Italian Oyster** Clusters of tender brown caps with thick white stems. Considered to be one of the finest culinary oyster mushrooms. Also considered to be very medicinal with cardiovascular and cholesterol-controlling benefits. Grows well on many different hardwood species including oak, maple and poplar.

L598A Italian Oyster Plug Spawn, bag of 100, $15.00
L598B Italian Oyster Plug Spawn, bag of 500, $32.00
598C Italian Oyster Sawdust Spawn, $20.00
L598D Italian Oyster Plug Kit, $25.00

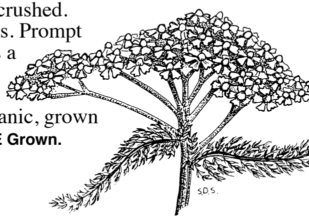
***Stropharia rugosoannulata* Wine Cap** Vigorous red-capped fruiting bodies for growing in non-sterile environments such as outdoor sawdust beds, wood chips and straw. Prefers hardwood chips but will grow on a mix of soft and hard. Once established, they will produce for several years and can be easily transplanted to fresh woody debris beds. (Available as sawdust spawn only.)

599C Wine Cap Sawdust Spawn, $20.00

Herbaceous Perennial Plants

USDA hardiness zone (chart on page 71) follows each description.
All our plants are nursery propagated. They are not dug from the wild!
All plant stock is bare root unless otherwise noted.

Achillea millefolium **'Summer Pastels' Yarrow** Blooms June through September featuring 2–3" flat-topped heads of little pastel flowers in a range of colors including pink, red, white, yellow, salmon, orange and mauve. Green fern-like foliage is aromatic when crushed. Excellent for fresh and dried arrangements. Prompt removal of faded flower heads guarantees a long season of blooms. Plant 12–24" apart in well-drained soil, full sun to part shade. 18–24" tall. MOFGA-certified organic, grown at Ripley Farm in Dover-Foxcroft. Z3. **ME Grown.**



***L675A**: 1 for $6.50*
***L675B**: 3 for $17.00*
***L675C**: 6 for $30.50*

Aconitum napellus **English Monkshood** Also called **Friar's Cap**. Produces a mass of late summer blooms with dense showy spikes of dark violet-blue helmet-shaped flowers above elegant palmate foliage in late summer. Grand delphinium-style blooms rarely need staking. An excellent cutflower—cut when $^1/_3$ to $^1/_2$ the spike is in bloom. I love watching bumblebees climb under the hood and completely disappear into the flowers then clamber out again covered with pollen. *The entire plant is poisonous; wash your hands after handling or cutting*. Prefers partial shade. Plant 15–20" apart in moist soil. 36–40" tall. Z3.

***L676A**: 1 for $3.00*
***L676B**: 3 for $5.50*
***L676C**: 6 for $10.00*

Alcea **Hollyhock** Classic towering spires covered with disc-shaped blossoms for extended bloom from June to October. This year we're offering all first-year–flowering cultivars that are truly perennial, not biennial like most Alceas on the market. Cut back to 12" after flowering has finished to encourage root growth. Plant 12" apart in moist well-drained soil. Grows 5–6' tall. *Supplies may be limited. Order early!* Z3. ($3^1/_2$" plug stock)

A. ficifolia **'Las Vegas' Singles Mix** Remarkable fig-leaved hollyhock displays single flowers in a foxy range of colors from chestnut-brown to red, pink to white, and yellow to copper.

***L677A**: 1 for $4.50*
***L677B**: 3 for $11.75*
***L677C**: 6 for $22.00*

A. rosea **'Black Knight'** A single dusky midnight-purple beauty with a watchful yellow eye. Night gathers, and now my watch begins. I shall live and thrive at my post. I am the shield that guards the garden gate. I shall not be eaten by Japanese beetles—for in my dreams, they only have eyes for the golden-petaled beauties. I pledge my life and honor to lead you safely up the garden path, for this night and all the nights to come.

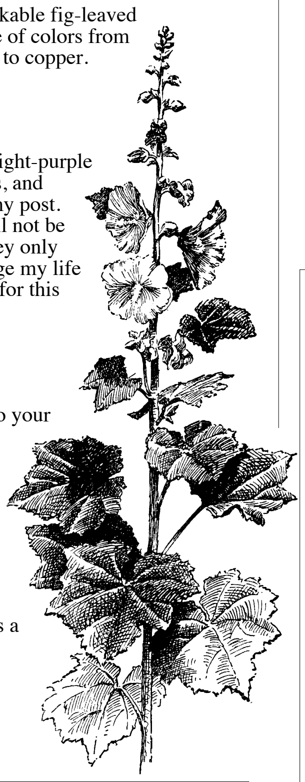
***L678A**: 1 for $4.50*
***L678B**: 3 for $11.75*
***L678C**: 6 for $22.00*

A. r. **'Mars Magic'** Bring a vintage look back to your homestead with this classic single bright red hollyhock. By far the most popular hollyhock in Fedcoland!

***L679A**: 1 for $4.50*
***L679B**: 3 for $11.75*
***L679C**: 6 for $22.00*

A. r. **'Radiant Rose'** Old-fashioned bright rose-pink single blossoms. I planted mine with Black Knight at the corner of my hyssop bed. It's a veritable pollination café when the flowers come out—a steady buzz of hummingbirds and mason bees abounds.

***L680A**: 1 for $4.50*
***L680B**: 3 for $11.75*
***L680C**: 6 for $22.00*



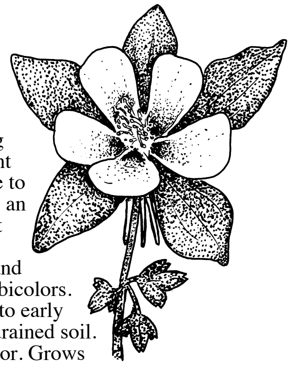
All the names

Language reflects the beauty or sense of humor of people and also how they relate to the natural world. Every culture has names for its plants. The binomial Latinized system doesn't replace this diversity, and it's fun to explore the meanings of plant names in English and in other languages. Many common plant names are not only fanciful, but also very practical. Arrowwood or Jack-in-the-Pulpit speak to the use or appearance of those plants. Same with the stinky Corpse Flower. Monkshood is quite poisonous and, well, the name is pretty creepy, too. The Passamaquoddy word for Red Elderberry or June-bearing Elder (*Sambucus racemosa*) is *puskockolanimin,* which translates to 'goes right through you fast with a sound.' Given the emetic cathartic effects of these poisonous berries, this name says it all.

Amsonia tabernaemontana **var.** ***salicifolia*** **Willow-leaf Bluestar** Clusters of deep blue pointed flower buds form and open into powder-blue star-shaped florets held above deep green fine grassy willow-like foliage. Blooms in early June in northern Maine. Gorgeous foliage turns gold in the fall. Best planted en masse. Forms a handsome vase shape at maturity. Looks fabulous with catmint and irises. Native to Illinois and onwards south to Texas. Prefers moist woodland slopes. Adaptable to most garden environments but performs best in full sun to part shade. Plant 12–18" apart in moist slightly acidic soil. 30" tall. MOFGA-certified organic, grown at Ripley Farm in Dover-Foxcroft. Z3. **ME Grown.**

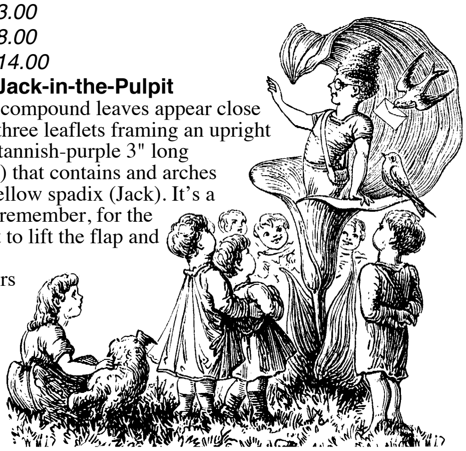
***L681A**: 1 for $5.75*
***L681B**: 3 for $15.00*
***L681C**: 6 for $27.00*

Aquilegia **'McKana Giants' Columbine** Delightful little stacks of round-lobed leaves emerge in early spring when not much else is green. Soon after, magical jewel-like nodding blossoms dance above the foliage. The elegant slender spurs are filled with nectar irresistible to pollinating hummingbirds. McKana Giants is an old British variety of uncertain parentage that combines the delights of the wild columbine habit with giant flowers sporting long spurs and a bright bold assortment of colors, including bicolors. Excellent for cutting. Blooms from late May to early June. Plant 12–18" apart in light moist well-drained soil. Dappled shade guarantees the best flower color. Grows 24–30" tall. Z3.



***L682A**: 1 for $3.00*
***L682B**: 3 for $8.00*
***L682C**: 6 for $14.00*

Arisaema triphyllum **Jack-in-the-Pulpit** In midspring, one or two compound leaves appear close to the ground, each with three leaflets framing an upright stem topped by a striped tannish-purple 3" long cuplike spathe (the pulpit) that contains and arches over the erect greenish-yellow spadix (Jack). It's a great pleasure, one I still remember, for the two- or three-year-old set to lift the flap and see Jack. This magical Northeastern native prefers dappled shade and moist rich woodland soil. Plant 10–18" apart. Grows 12–24" tall. Z3.



***L683A**: 1 for $4.25*
***L683B**: 3 for $10.00*
***L683C**: 6 for $18.00*

Planting Guide for Bare-root Perennials

To receive our guarantee (see page 2) for items on pages 55-66, you must have followed these instructions:

When you receive your order:

- Open the bags and check the plant stock immediately.
- Roots and crowns should be firm and pliable, not soft or brittle.

Do not plant directly outside!
Pot up the rootstock in well-drained potting mix.

- Small roots need at least a 4" deep x 3.5" diameter pot.
- Medium to large roots need a 6" deep x 6" diameter pot.
- Avoid coiling the roots in the bottom of undersized containers.

Set the pots out in semi-shade for 1 to 2 weeks.
During this time you must protect your plants from:

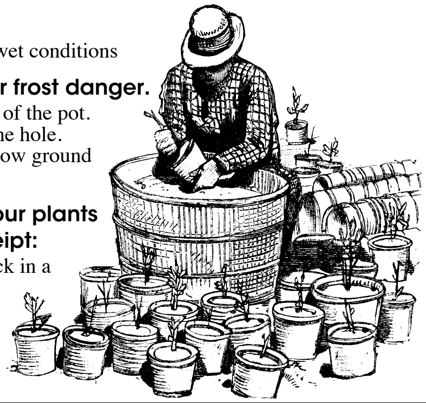
- Freezing
- Drying out
- Too much water
- Long periods of cold & wet conditions

Transplant outside after frost danger.

- Dig a hole twice the size of the pot.
- Add a little compost to the hole.
- Plant crown-tops just below ground level.

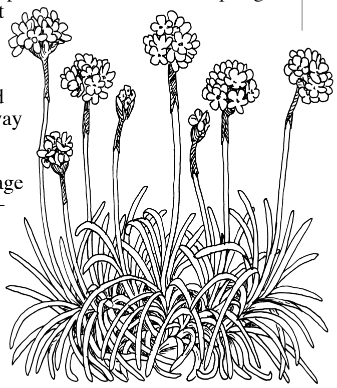
If you cannot pot up your plants immediately upon receipt:

- Store bare-root plant stock in a cool, dark (35–40°) location for no more than one week.



***Armeria maritima* 'Splendens' Sea Thrift** Also known as **Thrift** or **False Sea Pink**. Bright carmine-rose ball-shaped flowers bloom all spring atop long lanky leafless stalks held above tight mounds of silvery evergreen grassy foliage. Makes a tidy clump in the rock garden or container, but also great planted en masse as a groundcover. Tolerates hot dry rocky soils and grows beautifully along the coastline or highway where few other garden plants can tolerate the high salt concentrations. Shear off faded flowerheads for attractive little clumps of foliage throughout the season. Resents being moved—choose a spot near the front of border or rock garden and leave it there. Prefers full sun. Requires well-drained soil. Plant 8–12" apart. Light loose winter mulch recommended. Grows 8–10" tall. Z3. (3" plug stock)

***L684A**: 2 for $7.25*
***L684B**: 4 for $13.50*
***L684C**: 6 for $19.25*



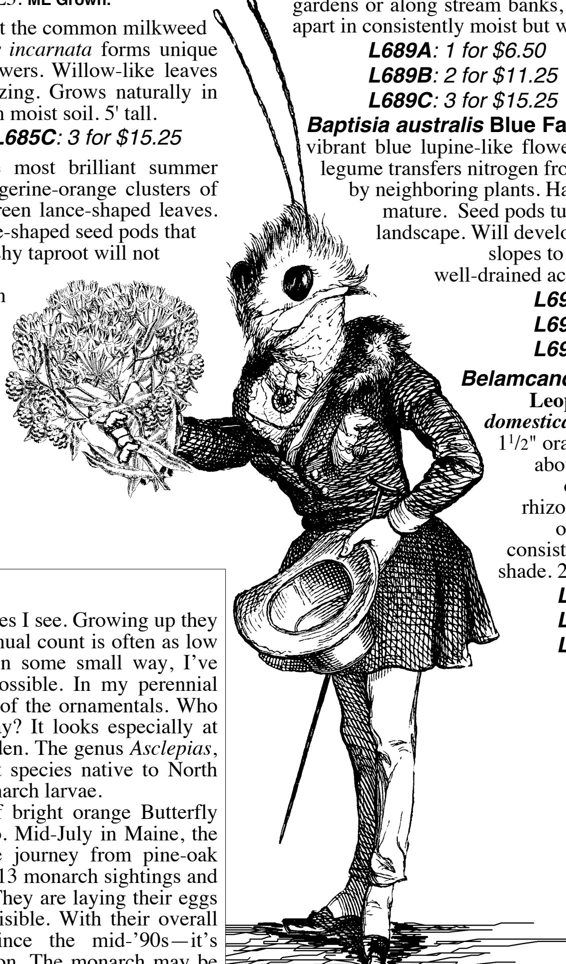
Asclepias Named for Asklepios, the Greek god of healing. Commonly known as **Pleurisy Root**, dried roots from the genus were traditionally used in small doses as an expectorant, anti-inflammatory and general tonic. Attracts all manner of bee and butterfly. Watch one of the miracles of summer unfold before your eyes as monarchs lay their eggs on the leaves—a nutritious food source for the resulting caterpillars. Both MOFGA-certified organic, grown at Ripley Farm in Dover-Foxcroft. Z3. **ME Grown.**

***A. incarnata* Swamp Red Milkweed** This is not the common milkweed so familiar to all of us in the Northeast. *Asclepias incarnata* forms unique flattened clusters of upturned red-rose–colored flowers. Willow-like leaves are 4–5" long. Clump-forming; great for naturalizing. Grows naturally in floodplains and wet meadows. Plant 18–36" apart in moist soil. 5' tall.

***L685A**: 1 for $6.50* ***L685B**: 2 for $11.25* ***L685C**: 3 for $15.25*

***A. tuberosa* Butterfly Weed** Undeniably the most brilliant summer wildflower in North America, featuring vivid tangerine-orange clusters of flowers atop slender fuzzy stems, covered with green lance-shaped leaves. Spent flowerheads transform into prominent spindle-shaped seed pods that make a unique addition to mixed bouquets. The fleshy taproot will not tolerate clay or low ground. Late to emerge in spring—be patient. Plant in full sun, 18–24" apart in well-drained fertile soil. 24" tall.

***L686A**: 1 for $7.25*
***L686B**: 3 for $18.75*
***L686C**: 6 for $33.75*



Leave that Weed

Every summer I count how many monarch butterflies I see. Growing up they seemed abundant in the landscape, but now my annual count is often as low as 2 or 3. One year I didn't see any. To help in some small way, I've encouraged the milkweed population wherever possible. In my perennial gardens, milkweed isn't a weed anymore but one of the ornamentals. Who decided such a fancy flower wasn't pretty anyway? It looks especially at home among the more traditional plants of the garden. The genus *Asclepias*, known as the milkweeds, consists of 27 different species native to North America. Milkweed is the only food source for monarch larvae.

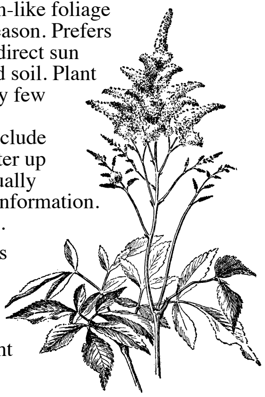
In addition to common milkweed, plantings of bright orange Butterfly Weed, *Asclepias tuberosa*, are attracting them, too. Mid-July in Maine, the monarchs are just arriving from their 1000-mile journey from pine-oak forests in central Mexico. My count so far is up to 13 monarch sightings and there's a chrysalis stuck to the side of the house. They are laying their eggs on the milkweed and caterpillars are becoming visible. With their overall population in massive decline—down 80% since the mid-'90s—it's encouraging to see so many this early in the season. The monarch may be listed as endangered by this spring.

While I'm not the biggest fan of thistle, butterflies of all kinds feed on their flowers, so don't feel too bad if you don't manage to completely eradicate this prickly presence from your property. The same goes for vetch and goldenrod. Something to keep in mind when planning a butterfly garden is that large masses of butterfly plants make better habitat than scattered plantings. Xerces Society for Invertebrate Conservation has helped protect more than 680,000 acres of land across the U.S. for pollinators. Through cost-share programs of USDA's Natural Resource Conservation Service (NRCS), farmers and landowners are planting out more acres of native pollinator habitat every year. See the NRCS website for more details or contact your local NRCS office. Check out the Fedco Seeds catalog, too, for wildflower mixes.

– Lauren Cormier

***Astilbe* Feather Flower** Also called **False Spirea**. Long-lasting plumes of flamboyant feathery flowers light up the shadier parts of the perennial border. Excellent as a dried flower. Elegant fern-like foliage forms an attractive clump that looks good all season. Prefers cool shady areas but is surprisingly tolerant of direct sun when planted in consistently moist well-drained soil. Plant 18–24" apart and mulch it! Divide clumps every few years. Z4.

This year's **Awesome Astilbe Mixes** each include our choice of 3 amazing astilbe varieties to glitter up your shade gardens! Each plant will be individually bagged and labeled with its name and cultural information. Height range for both mixes is between 18–40".



Red & Purple Rain Mix Color range includes lavender-purple, raspberry-pink, raspberry-purple and red shades.

***L687A**: 3 for $14.25*

Light & Lovely Mix Color range includes light pink, peach, and milk-and-honey white shades.

***L688A**: 3 for $14.25*

***Astrantia major* 'Star of Beauty' Masterwort** Carmine-rose rounded pincushion or buttonhead-type flowers with white centers are cupped by stars of rosy bracts. Often called **Hattie's Pincushion**. Clump-forming plant with loose basal rosettes of palmate leaves. Excellent cutflower both fresh and dried. Long bloom time—June through August. Thrives in woodland gardens or along stream banks, and deeply resents drying out. Plant 18–24" apart in consistently moist but well-drained soil. Part sun. 20" tall. Z4.

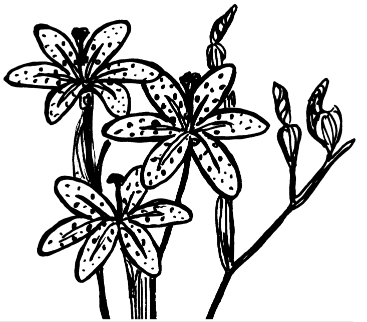
***L689A**: 1 for $6.50*
***L689B**: 2 for $11.25*
***L689C**: 3 for $15.25*

***Baptisia australis* Blue False Indigo** An early summer stand-out with vibrant blue lupine-like flowers. Native pollinator plant. Nitrogen-fixing legume transfers nitrogen from the air to the soil where it can be absorbed by neighboring plants. Has a bushy habit and shrub-like structure once mature. Seed pods turn black in fall, adding interest to the autumn landscape. Will develop an extensive root system, good for holding slopes to prevent erosion. Plant 3' apart in full sun and well-drained acid soil. Grows 3–4' tall and just as wide. Z3.

***L690A**: 1 for $6.75*
***L690B**: 3 for $17.25*
***L690C**: 6 for $31.00*

Belamcanda chinensis* Blackberry Lily** Also called **Leopard Lily**. The official botanical name is ***Iris domestica though no one seems to call it that. Brilliant 1½" orangey-red flowers with maroon spots are held above iris-like fans of deep green foliage. Sturdy clump-forming plants spread by underground rhizomes. Capable of blanketing entire hillsides in optimal growing conditions. Plant 18" apart in consistently moist well-drained soil. Full sun to part shade. 24–36" tall. Z4.

***L691A**: 1 for $6.75*
***L691B**: 3 for $17.25*
***L691C**: 6 for $31.00*



Food for Butterflies and Their Larvae

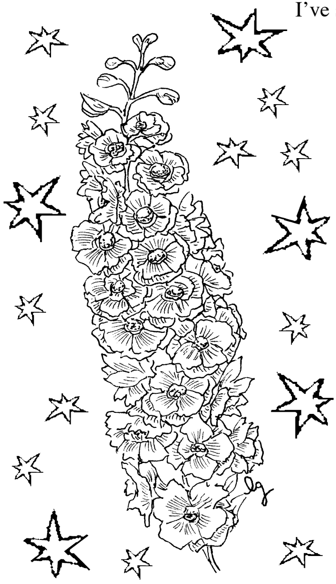
Woody:
- Allegheny Serviceberry
- Buttonbush
- Summersweet
- Pagoda Dogwood
- Redosier Dogwood
- Steeplebush
- Common Purple Lilac
- Paper Birch
- Hackberry
- Musclewood

Herbaceous:
- Yarrow
- Butterfly Weed
- Swamp Milkweed
- Blue False Indigo
- Rattlesnake Master
- Blazing Star
- Catmint
- Wild Senna
- New England Aster
- Echinacea
- Wild Bergamot

***Campanula glomerata* 'Superba' Clustered Bellflower** Spherical clusters of upward-facing bell-shaped violet-blue to deep royal-purple flowers form atop dense rhizomatous basal clumps of green fuzzy foliage. Highly recommended for cutflower production. Absolutely stunning in mixed bouquets with Butterfly Weed and Rattlesnake Master. Plant 12 –18" apart in full sun to part shade in average well-drained soil. The farther north you are, the more sun it requires. Our certified-organic stock is grown at Ripley Farm in Dover-Foxcroft. 28" tall. Z3. **ME Grown.**

***L692A**: 1 for $6.50*
***L692B**: 2 for $11.25*
***L692C**: 3 for $15.25*

***Delphinium* New Millennium Stars Mix** This hybrid series mix of first-year–flowering delphiniums features some of the most glorious cultivars I've seen—Black Eyed Angels, Blue Lace, Cobalt Dreams, Lilac Ladies, Moonlight Blues, Pagan Purples and Pink Punch, to name a few. Elegant cylindrical terminal flower spikes rise 3–6' above waist-high clumps of palmate glossy green foliage. The New Millenniums develop thicker sturdier flower stalks than the more widely known Pacific Giants. Considered more tolerant to heat and humidity than many standard cultivars, yet the New Millenniums also thrive in super-chilly corners of the world with reports of successful perennial plantings in frosty parts of Canada and even Alaska! Avoid overhead watering to prevent disease. Mulch recommended to keep the roots cool and moist. Delphiniums are hungry hippos—sidedress regularly with compost for best bloom. Plant 36" apart in highly fertile non-acid loam. Light shade is best but full sun is fine. 60" tall. Z3. ($3^{1}/2$" hardy plug stock)



***L693A**: 1 for $6.50*
***L693B**: 2 for $11.25*
***L693C**: 3 for $15.25*

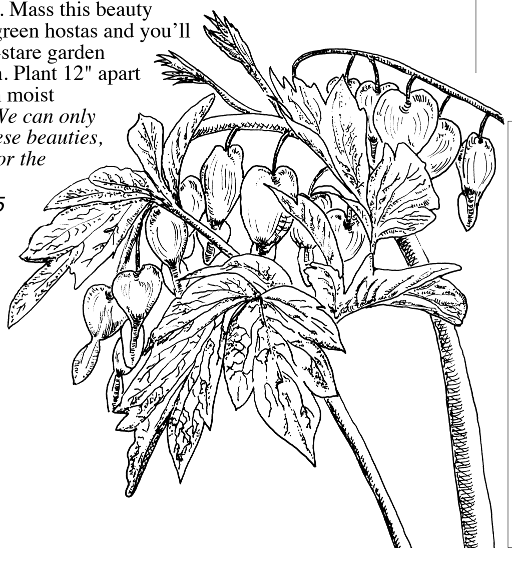
Dicentra Graceful racemes arch over clumps of attractive cut foliage. Distinctively shaped flowers dangle in a row on each raceme like charms on a bracelet. Z3.

***D. eximia* Fringed Bleeding Heart** North American native plant with lacy blue-green foliage and unique dangling heart-shaped blossoms that characteristically wear pink, but on occasion, are in the mood for white. Starts blooming in early summer and with regular deadheading can be cajoled into flowering all summer long. Given cool woodland conditions, the foliage of this Dicentra stays awake and looking good all season. Native to the Northeast and the Appalachian Mountains. Plant 12" apart in full to dappled shade in moist well-drained fertile soil. Will not tolerate wet winter soils. Freely self sows and will form a lovely colony if you let it. 18" tall.

***L694A**: 1 for $6.75*
***L694B**: 3 for $17.50*
***L694C**: 6 for $31.50*

***D.* x 'Sulphur Hearts' Yellow Bleeding Heart** Lovely sulphur-yellow hearts dangle above soft blue-grey lacy foliage from late spring to early fall. Flower color can be described as a cool matte pastel lemon-yellow with a subtle lavender-purple tip. Mass this beauty together with some blue-green hostas and you'll have the perfect stop-and-stare garden along your woodland path. Plant 12" apart in full to dappled shade in moist well-drained fertile soil. *We can only get our hands on 50 of these beauties, so order early and hope for the best!* 12" tall.

***L695A**: 1 for $11.75*



***Digitalis* Foxglove** Delightful tubular bell-shaped flowers with veined and spotted throats form along stately spires above basal rosettes of deep green velvet foliage. Flowers June through August. Good for cutting or the naturalized border. A must-have in every cottage garden. This year's offerings are both considered perennial but are best treated as biennials. Spread out the seedlings as they appear and a glorious patch will result in a few years. Plant 12–24" apart in moist slightly acid soil in full sun to part shade. *Caution: all parts of the plant are poisonous; wash hands after handling*. Z3. ($3^{1}/2$" plug stock)

***D. mertonensis* Strawberry Foxglove** Copper-tinged strawberry-rose $2^{1}/2$" pendulous bell-shaped flowers adorned with pink and white spotted throats. The hardiest foxglove for northern gardens. 2–4' tall.

***L696A**: 1 for $4.50*
***L696B**: 3 for $11.75*
***L696C**: 6 for $22.00*

***D. purpurea* 'Dalmation Peach'** Elegant peachy-yellow blossoms with orange speckled throats. This soft and subtle beauty flowers the first year. 2–3' tall.

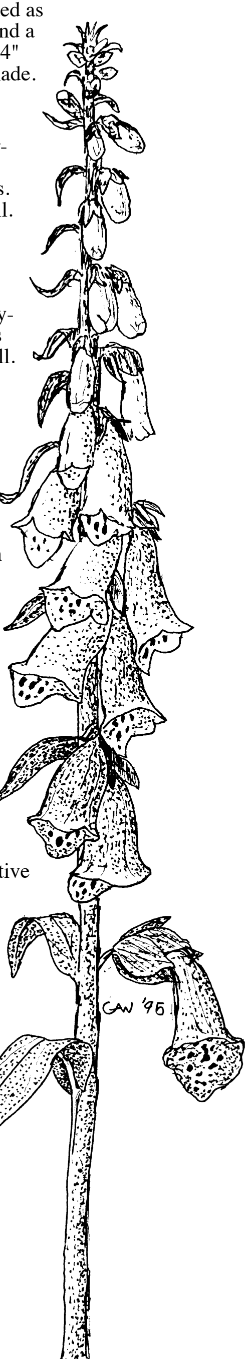
***L697A**: 1 for $4.50*
***L697B**: 3 for $11.75*
***L697C**: 6 for $22.00*

***Echinops ritro* Blue Globe Thistle** Luminous $1^{1}/2$" steel-blue spiky spheres balance atop stiff stems with deeply divided silvery green leaves. *Echinops* comes from the Greek word for 'hedgehog.' Excellent addition to wreaths and fresh or dried arrangements. Blooms July to August. Beloved by bees. Tolerates shallow rocky ground. Plant 1–2' apart in full sun and well-drained soil. MOFGA-certified organic. Grown at Ripley Farm. 3–4' tall. Z3. **ME Grown.**

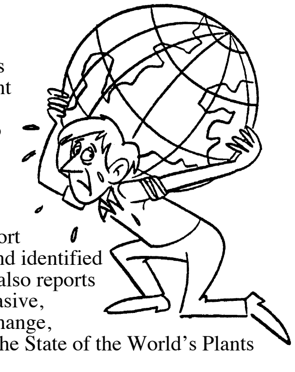
***L698A**: 1 for $6.75*
***L698B**: 3 for $17.25*
***L698C**: 6 for $31.00*

***Eryngium yuccifolium* Rattlesnake Master** Shimmering globe-thistle–like 1" greenish-white flowerheads with feathered silvery-green bracts on smooth stiff stems surrounded by sharply cut leathery foliage. Emits a subtle honey-like scent during the heat of the day. This North American native exhibits a rare and beautiful silhouette wherever it grows. Fabulous for cutflower production—an excellent bouquet-builder, providing good structure for arrangements. Attracts numerous types of long- and short-tongued bees, wasps, flies, butterflies, moths and beetles. Self-seeds freely over time. Plants tend to open up and sprawl if grown in rich soils or in anything less than full sun. Forms a taproot and is best left undisturbed once established. Plant 18–24" apart in full sun and well-drained sandy soil. MOFGA-certified organic. Grown at Ripley Farm. 3–6' tall. Z3. **ME Grown.**

***L699A**: 1 for $7.25*
***L699B**: 2 for $12.50*
***L699C**: 3 for $16.50*



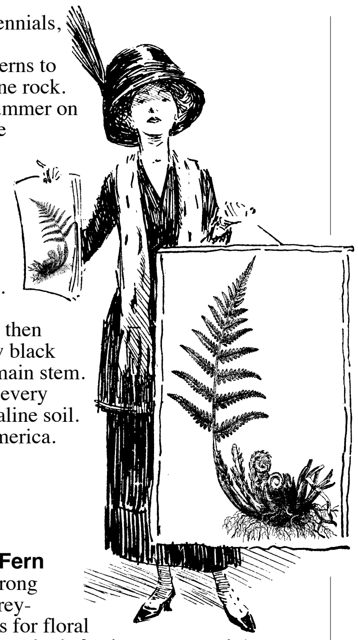
State of the World's Plants



In 2016, the Royal Botanic Gardens, Kew, released its first State of the World's Plants report, assessing current knowledge of plant diversity and the threats plants face. They estimated that 390,900 plants are known to science, with 2,034 new plant species discovered in 2015 alone. The report also warned that 21% of plants are at risk of extinction.

The 2017 State of the World's Plant report added 1,730 new plant species to the list and identified 28,187 plants as having medicinal uses. It also reports 6,075 plant species are documented as invasive, which alongside habitat loss and climate change, threaten our planet's plant diversity. Find the State of the World's Plants reports at stateoftheworldsplants.com.

All the plants in the report's estimates are cataloged in the International Plant Names Index, found at ipni.org.



Ferns are flowerless spore-producing perennials, represented by more than 10,000 species worldwide, ranging from 70' tropical tree ferns to teensy plants sprouting from cracks in alpine rock. In Maine we enjoy lush fern displays all summer on the roadsides and in the woods. Ferns make wonderful low-maintenance foliage plants that thrive in woodsy humus-rich soil and lend a serene aura to a shady garden or landscape. Mulch with 2" of leaves if necessary to keep crowns from drying out.

Adiantum pedatum **Maidenhair Fern** Also known as **Eastern Maidenhair Fern**. Delicate whorled form makes it one of my favorites. Glossy black stems curve up and then droop toward the ground with more narrow black stems growing in elegant arches from the main stem. Tiny distinct ginkgo-like green leaves line every stem. Prefers partial shade and slightly alkaline soil. Plant 12" apart. Native to eastern North America. Grows 10–12" tall. Z2.

L700A*: 2 for $6.50*
L700B*: 4 for $11.25*
L700C*: 6 for $15.00*

Dryopteris marginalis **Leatherwood Fern** Also known as **Evergreen Wood Fern**. Strong sturdy stems and slightly glossy leathery grey-green fronds make this one of the best ferns for floral arrangements. In late spring it's great fun to look for immature sori (spore cases) on the underside of the frond. Hunt for small green bumps along the margins of the subleaflets. Later in the year, the sori changes color to rusty-brown. Evergreen leaves flourish through the winter and can be found in rocky wooded slopes in Canada, onwards south to Alabama and farther west to the Rocky Mountains. Performs best in less than 3 hours of sunlight per day but will tolerate more if you ask nicely. Plant 12" apart in moist well-drained woodland soil. 24" tall. Z3.

L701A*: 2 for $6.50*
L701B*: 4 for $11.25*
L701C*: 6 for $15.00*

Osmunda regalis **Royal Fern** Attains giant proportions! Soft and wavy deciduous lance-shaped light green fronds can reach 3' long. Sometimes called **Flowering Fern** because some of the fronds have brown spore cases on their tips that lend a decorative tassel-like appearance. One of the showiest garden ferns makes a great focal point at the waterside or in a woodland. Can reach up to 6' tall and spread to more than 9' wide at maturity. Evolutionarily speaking, *Osmunda* is one of the oldest plant genera, native to North and South America and Asia. Some Royal Fern individuals are said to be 1000 years old. Ours are much younger. Prefers wet boggy areas and part shade. Plant 18" apart in consistently moist soil. Z2.

L702A*: 2 for $6.50*
L702B*: 4 for $11.25*
L702C*: 6 for $15.00*

Humility

According to the etiquette of botanical nomenclature, one must not name a new plant after oneself. It is simply not done, as it would be abominably hubristic. You may, however, through goodness, excellence and grace, aspire to having a plant named for you someday.

Geranium maculatum **Spotted Cranesbill** Clusters of single $1^{1}/_{4}$" wide pinkish-lilac saucer-shaped flowers. The deeply cut leaves turn vivid shades of reddish-orange in autumn and distinctive long narrow "cranesbill" seedpods flutter jauntily above the spreading foliage. Vigor, longevity, hardiness, lo-o-ong flowering period and lush attractive foliage make this North American native useful for borders, edging, rock gardens or as an orchard companion. Also known as **Wild Geranium**, this is the true geranium. Beneficial insect attractor. Native pollinator plant. Low-growing spreading groundcover. For best results plant in the lightly shaded areas of wild open woodland gardens or in the orchard underneath your ancient apple trees. Plant 12–18" apart in average garden soil. 24" tall. Z4.

L703A*: 3 for $6.50* ***L703B****: 6 for $11.40* ***L703C****: 12 for $20.50*

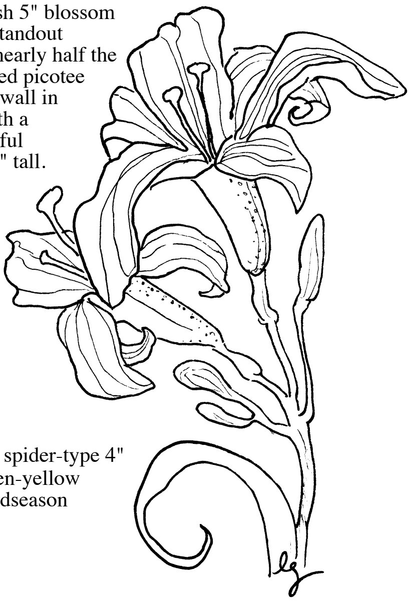
Geum quellyon **var.** ***flora plena*** **'Blazing Sunset' Avens** Brilliant red flowers appear on 20" stalks above mounded rosettes of serrated foliage. Nodding daintily at first, they soon stand at attention to show their stunning double intense scarlet blooms with golden-yellow eyes. Attracts butterflies and hummingbirds with long-lasting late-spring to midsummer blooms. Plant in full to part sun, 12" apart in moist well-drained soil. 24" tall. Z4. ($3^{1}/_{2}$" plug stock)

L704A*: 1 for $5.25* ***L704B****: 3 for $13.75* ***L704C****: 6 for $24.50*

Helenium autumnale **Red & Gold Sneezeweed Mix** Supposedly used for snuff in earlier times, hence the common name. A rich and blazing scheme of bronze, brown, crimson and yellow for a vibrant end-of-summer display. Single flowers resemble Coreopsis in shape but have a large center "button" much like a coneflower. Combine with asters and phlox for great late-season color. Not fussy, easy to grow, excellent cutflower. At its prime when most perennials are done blooming. Plant 18" apart in full sun. Grows 4–5' tall. Z3. **ME Grown.**

L705A*: 1 for $5.75* ***L705B****: 3 for $15.00* ***L705C****: 6 for $27.00*

Hemerocallis **Daylily** Champion low-maintenance perennial produces a bush of narrow arched leaves topped with lily-shaped flowers from July to September. *Hemerocallis* means 'beautiful day,' referring to the fact that each flower lasts only a day, but since each scape (or stem) is covered with buds, bloom periods can be extensive and the long stems work well in bouquets. Trouble-free, chokes out weeds. Flourishes under a wide range of conditions, from full sun to shade, wet to dry. Plant 12–18" apart in average soil; benefits from an annual shovel or two of compost. This year's stock is one-year-old field-grown rootstock with two fans. Z2.



H. **'Adorable Tiger'** Outlandish 5" blossom with a golden-yellow base and standout sienna-red eye-ring that covers nearly half the petal. Polished off by a unique red picotee edge. There's a massive granite wall in Norridgewock all dressed up with a handsome patch of these delightful stunners. Midseason blooms. 26" tall.

L706A*: 1 for $7.25*
L706B*: 2 for $12.50*
L706C*: 3 for $17.00*

H. **'Barbara Mitchell'** Elegant 6" soft pink flowers with gently rounded ruffled petals and yellow-green throats. Midseason re-bloomer. 20" tall.

L707A: *1 for $7.25*
L707B: *2 for $12.50*
L707C: *3 for $17.00*

H. **'Crimson Pirate'** Stunning spider-type 4" flaming red blossoms with golden-yellow midribs and throats. Fragrant midseason blooms. 30" tall.

L708A: *1 for $7.25*
L708B: *2 for $12.50*
L708C: *3 for $17.00*

H. **'Fragrant Returns'** Sweetly scented 4" wide luminous lemon-yellow flowers with subtle ruffled edges. This powerhouse everblooming variety starts early and goes till frost! 18" tall.

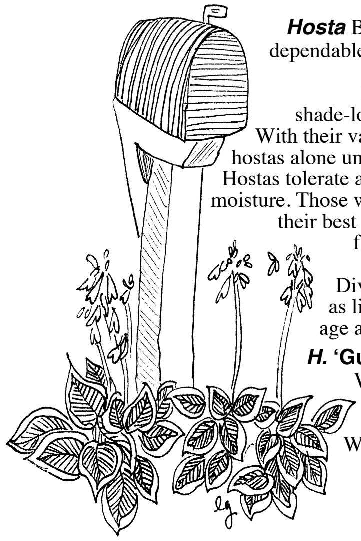
L709A*: 1 for $7.25* ***L709B****: 2 for $12.50* ***L709C****: 3 for $17.00*

H. **'Lavender Blue Baby'** Fragrant $5^{1}/_{2}$" rosy-lavender-blue blossoms with prominent lavender-blue eye-rings, chartreuse throats and recurved edges. The colors blend together for a tie-dyed effect. If a daylily were to attend a Grateful Dead show, this would be the one. Early to midseason rebloomer. 28" tall.

L710A*: 1 for $7.25* ***L710B****: 2 for $12.50* ***L710C****: 3 for $17.00*

H. **'Passionate Returns'** Fragrant 4" bright clear super-rosy-red blossoms with golden-yellow throats with a touch of apple-green at the deepest point. Near-perfect form. One of the best daylilies ever introduced by hybridizer Darrel Apps who ambitiously plants out 2500 seedlings every year then watches and waits for those worthy of introduction to appear. Long season blooms span a 3-month run from early summer through fall! 17" tall.

L711A*: 1 for $7.25* ***L711B****: 2 for $12.50* ***L711C****: 3 for $17.00*



Hosta Bold foliage forms orderly mounds with dependable sprays of fragrant bell-shaped flowers on tall stalks. Valuable and cherished low-maintenance border plant provides shade-loving groundcover from spring to frost. With their varying colors, textures and clump sizes, hostas alone under trees can make a woodland garden. Hostas tolerate a wide range of soil conditions but need moisture. Those with blue and variegated leaves develop their best color in shade. Deep shade gives fewer flowers but better leaf colors. Plant 2–4' apart in rich soil with adequate humus. Divide every 4–5 years, or disturb clumps as little as possible; they will improve with age as they spread and establish. Z3.

***H.* 'Guardian Angel'** A hosta like no other! We planted one of these glorious angels along our woodland path in 2014, another in 2016, and another in 2017. We have fallen in love with and can't get enough of the mystical color-changing display! In early spring, large thick heart-shaped blue-green leaves emerge and gradually shade-shift to display creamy-white centers. By late spring, a distinctive green misting appears over the white. By mid-to-late summer, the center of the leaf changes color again to a cool misty blue. Color variations improve with maturity. Lavender flowers. A fabulous sport of Blue Angel. 24" tall and 56" wide.

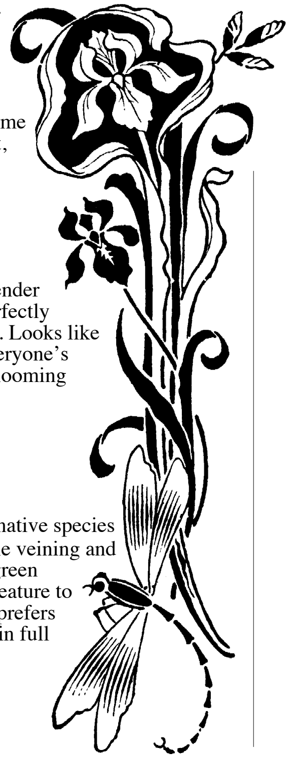
***L712A**: 1 for $5.50*
***L712B**: 3 for $13.00*
***L712C**: 6 for $23.00*

***H.* 'Lakeside Paisley Print'** Dramatic design and texture make this hosta a must-have for any collector. Unique heart-shaped leaves with wide wavy green margins. Slender, creamy-white and yellow streaks in the center of the leaf shoot out from the cream petioles in a fabulous feathered Farah Fawcett-style pattern! Lavender flowers on 24" scapes. 12" tall and 30" wide.

***L713A**: 1 for $9.25*
***L713B**: 2 for $16.00*
***L713C**: 3 for $22.00*

Humongous Hostas Mix Fulfill your shadiest garden fantasies! We will choose six of the biggest hosta varieties we can get our hands on, all listed as "Giants," in a variety of solid blues, solid greens, dark margins with light centers, and light margins with dark centers. Size matters: will be no shorter than 30" tall and up to 80" wide at maturity. Each plant will be individually bagged and labeled by name.

***L714A**: 6 for $31.50*



***Iris sibirica* Siberian Iris** In late June, delicate flowers dance above tall slender slate-green foliage that looks good all summer. Tolerates most conditions, but performs best in rich moist acid soil. Plant 18" apart in full sun or partial shade. Give them room to spread, and divide clumps every few years. Z3.

***I. s.* 'Concord Crush'** Large 6" double light blue flowers with a lemon-yellow blaze. Pair this handsome blue devil with Pink Parfait in a flower arrangement, take it to market, and the only sound you'll hear is "Cha-ching!" 28" tall.

***L715A**: 1 for $4.50*
***L715B**: 3 for $11.75*
***L715C**: 6 for $22.00*

***I. s.* 'Pink Parfait'** Large 7" double light pink-lavender flower that looks more like a rose than an iris is perfectly balanced atop an attractive fan of slate-green leaves. Looks like one of those fancy fondant cake decorations that everyone's gone bonkers over in recent years. Vigorous long-blooming tetraploid. 28" tall.

***L716A**: 1 for $4.50*
***L716B**: 3 for $11.75*
***L716C**: 6 for $22.00*

***I. versicolor* Northern Blue Flag** Northeastern native species carries gorgeous blue-violet flowers with bold purple veining and a white and lemon-yellow blaze. Tall slender blue-green arching lance-shaped leaves offer a strong vertical feature to the landscape. Requires consistently moist soil and prefers 2–4" of shallow standing water. Plant 12–24" apart in full sun to part shade. Early bloom time. 36" tall. Z2.

***L717A**: 3 for $10.75*
***L717B**: 6 for $18.50*
***L717C**: 12 for $33.00*

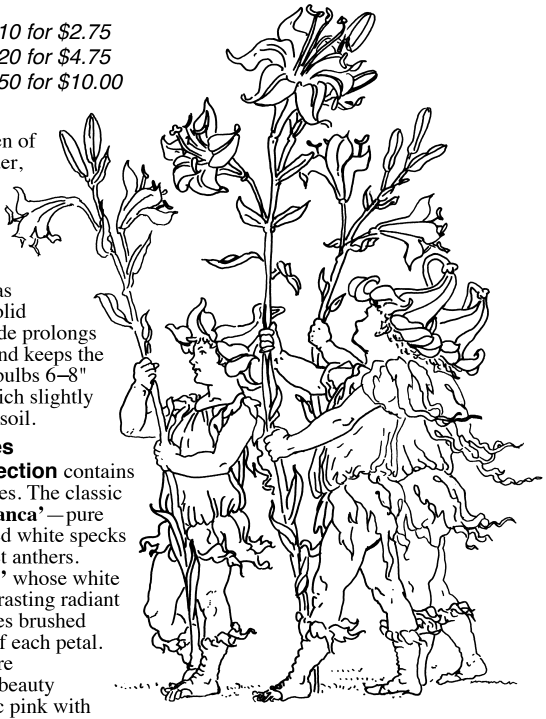
***Liatris spicata* Blazing Star** or **Gayfeather** Stiff dense "bottlebrush" flower spikes tower above fine grass-like foliage. Adds elegant structure to the perennial border and mixed bouquets. For cutflowers be sure to leave at least $^{1}/_{3}$ of the stem on each plant for best results. Blooms from July to September. Tolerates a broad range of growing conditions, but not drought. Plant in full sun, 3" deep, 8–12" apart, in well-drained fertile soil. Z3. ($1^{1}/_{4}$–$1^{1}/_{2}$" corms)

***L. s.* Floristan White** Dreamy white flower wands grow 30–36" tall.

***L718A**: 10 for $2.75*
***L718B**: 20 for $4.75*
***L718C**: 50 for $10.00*

***L. s.* Purple Blazing Star** Magical magenta-purple flower wands grow 20–30" tall.

***L719A**: 10 for $2.75*
***L719B**: 20 for $4.75*
***L719C**: 50 for $10.00*



***Lilium* Lily** Queen of the perennial border, fabulously showy and surprisingly easy to grow. Excellent as bedding plants or cutflowers, good as specimens or in solid masses. Light shade prolongs summer blooms and keeps the bulbs cool. Plant bulbs 6–8" deep, 6" apart in rich slightly acid well-drained soil.

Legendary Lilies Fragrance Collection contains 3 **Oriental** varieties. The classic favorite **'Casa Blanca'**—pure white with textured white specks and bobbing russet anthers. Delectable **'Dizzy'** whose white flowers have contrasting radiant rose-red centerlines brushed along the length of each petal. And finally the rare double-blooming beauty **'Thalita'**—classic pink with crimson spotting at the center. Height range within this collection: 30–44" tall. Each variety will be individually bagged and labeled by name. If any of these varieties is not available, we will substitute with an equally beautiful lily. Z3. ($1^{3}/_{4}$–2" bulbs)

***L720A**: 3 for $6.50*
***L720B**: 6 for $11.40*
***L720C**: 12 for $20.50*

***L.* 'Starfighter'** A real knockout Oriental lily with sizzling pinkish-red flowers, dark spotted throats and wide white edges. Upward-facing flowers. 44" tall. ($1^{3}/_{4}$–2" bulbs)

***L721A**: 3 for $6.50*
***L721B**: 6 for $11.40*
***L721C**: 12 for $20.50*

***L. tigrinum* 'Citronelle' Tiger Lily** Robust variety produces scads of luminous lemon-yellow flowers with recurved petals generously flecked with dark purple dots. Prominent rusty-red anthers produce a beautiful mahogany pollen. Tiger lilies are distinguished by purplish-black bulbils in the leaf axils along the stem. When the plant is happy, the bulbils will drop and sprout baby lilies by the score. 2–5' tall. Z2. ($1^{1}/_{2}$–$1^{3}/_{4}$" bulbs)

***L722A**: 3 for $6.50*
***L722B**: 6 for $11.40*
***L722C**: 12 for $20.50*

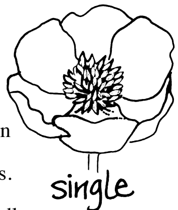
***Nepeta faassenii* 'Walker's Low' Catmint** Aromatic grey-green foliage with long arching stems topped by lavender-blue flowers provides an eye-catching show of color nearly all summer. Creates a strong dependable low-growing hedge along any garden path. Flowers attract bees, butterflies, hummingbirds and human admiration. 2007 Perennial Plant of the Year. Cut back in midsummer to encourage steady blooms. Likes hot and dry, but will grow in any well-drained soil. Plant 18–24" apart in full sun to part shade. Grows 2–3' tall despite its name. Z3.

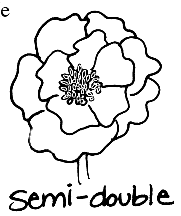
***L723A**: 1 for $6.75*
***L723B**: 3 for $17.75*
***L723C**: 6 for $32.00*

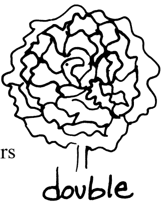
***Paeonia* Itoh Peony** Also known as **Intersectional Hybrid Peonies**, these wonders are a cross between herbaceous garden peonies and tree peonies and feature the best of both. Giant 6–9" blossoms (like the ones on tree peonies) open right after the garden peonies have faded. The growth habit is similar to garden peonies with attractive mounded foliage that dies back in the winter. But do not cut Itoh peonies down the ground in the fall—next year's buds need room to develop on the lower stems. Leave at least 6" of hardwood stems above the ground.

Named for Toichi Itoh, the Japanese hybridizer who supposedly made thousands of attempts to cross garden and tree peonies. He finally succeeded in 1948 but did not live to see his seedlings bloom. In the 1970s Toichi's widow gave an American breeder permission to introduce Itoh peonies to the West, where hybridizers took up the intersectional torch.

Full planting and pruning instructions will be included with your order. *Supplies limited—order early to avoid disappointment!* Z3. (Stock has 3–5 eyes.)







***Paeonia* (Itoh) x 'Bartzella'** Fragrant 6" semi-double lemon-yellow flowers with red flames at the center. Blossoms can display as fully double on occasion. 48" tall.

***L724A**: 1 for $43.25*
***L724B**: 2 for $75.00*
***L724C**: 3 for $100.00*

***Paeonia* (Itoh) x 'Julia Rose'** Cherry-red buds open to 8" fragrant semi-double orange-apricot-pink flowers with subtle purple edging. Blossoms eventually fade to yellow. All five colors can be seen on one plant at the same time. 30–36" tall.

***L725A**: 1 for $60.75*
***L725B**: 2 for $105.50*
***L725C**: 3 for $142.50*

***Paeonia lactiflora* Garden Peony** Also called **Chinese Peony**. Red shoots appear in spring and form a bushy clump, about 3x3', of lustrous dark green deeply lobed foliage. Fat spherical buds on sturdy stems above the foliage gradually open into large beautiful flowers from late spring to early summer. (Ants may help the buds to open so don't discourage their presence.) May take 3 to 5 years to establish before blooming and resents being disturbed or left in a pot for more than one winter. Wait several years until the plants have many stems (therefore many eyes) before dividing. Z3. (Stock has 3–5 eyes, except where noted.)

***P. l.* 'Coral Sunset'** Intense sunset coral with rose overtones and fluffy golden stamens. Semi-double. Light fragrance and long vase life. Early season. 28" tall.

***L726A**: 1 for $15.75*
***L726B**: 2 for $27.25*
***L726C**: 3 for $37.00*

***P. l.* 'Moon River'** Delectable double cream-colored blossoms with a lovely light pink blush. Blissfully fragrant 8" flowers are near perfect in form and one of the most popular for wedding bouquets. Midseason blooms. 28" tall. (3–4 eyes)

***L727A**: 1 for $25.50*
***L727B**: 2 for $44.00*
***L727C**: 3 for $59.25*

***P. l.* 'Paula Fay'** Glowing rich pink petals surround a golden yellow eye. Blossoms display a fluorescent quality in cooler climates. Light sweet fragrance. One of the best-looking early flowering semi-double peonies we've seen. Strong stems good for cutting. Early season. 35" tall.

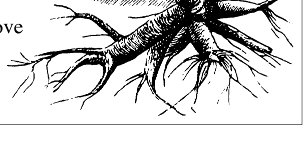
***L728A**: 1 for $26.75*
***L728B**: 2 for $46.50*
***L728C**: 3 for $63.00*

***P. l.* 'Red Charm'** Giant dark crimson double bomb-type with a heavily ruffled pile of petals in the center surrounded by a red guard of smooth single outer petals. Emits a gentle scent of cloves and roses. Extra-early bloom time! 32" tall.

***L729A**: 1 for $22.75*
***L729B**: 2 for $39.50*
***L729C**: 3 for $53.25*

Garden Peonies Planting Guide

- **Peonies prefer:** full sun to part shade, and rich fertile well-drained soil
- **Recommended soil amendments:** compost, bone meal, azomite
- **Plant rootstock** 2–3' apart with the eyes no more than 1½" below the soil.
- **Peonies require support** to prevent heavy flowers from flopping.
- **Autumn plant care:** Cut back to just above ground level to allow a fresh start in spring. Amend soil with compost around the base of the plant.



***Paeonia suffruticosa* Japanese Tree Peony** Also known as **Moutan**. Extravagantly big flowers with loose satiny petals bloom in early June before garden peony. Full sun promotes fastest growth but also fades the flowers, which do best in dappled shade. Prefers well-drained neutral to slightly alkaline soil. Plant them deep, the graft union 3" below soil surface, to encourage fresh roots and basal shoots. Overwatering is the most common cause of failure—monitor moisture inputs carefully for the first few growing seasons. Two-year-old grafted plants may need 1–2 years to mature before blooming begins. Appreciates an annual top dressing of bone meal in early fall. 48–60" tall. *Supplies limited—order early to avoid disappointment!* Z4.

***P. s.* 'Chojuraku'** Elegant silky semi-double lavender-pink flowers with slightly ruffled petals and yellow centers.

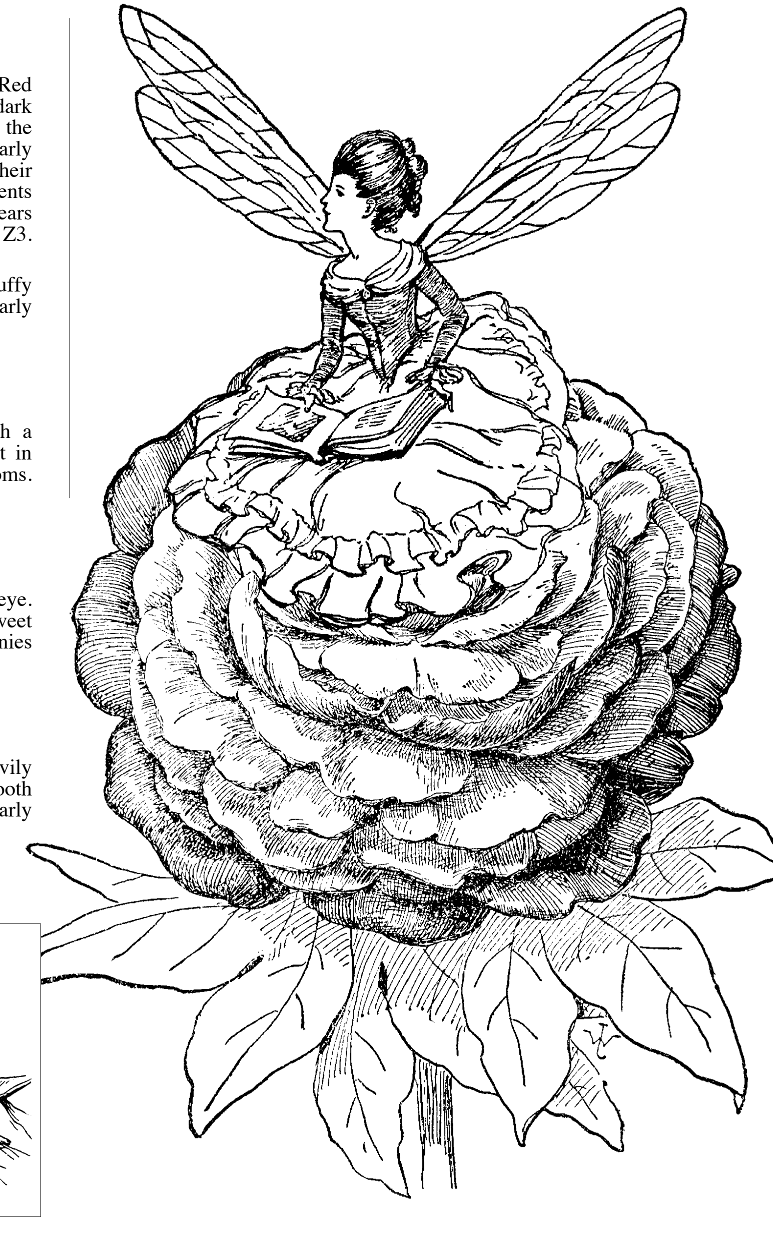
***L730A**: 1 for $37.75*
***L730B**: 2 for $65.50*
***L730C**: 3 for $88.50*

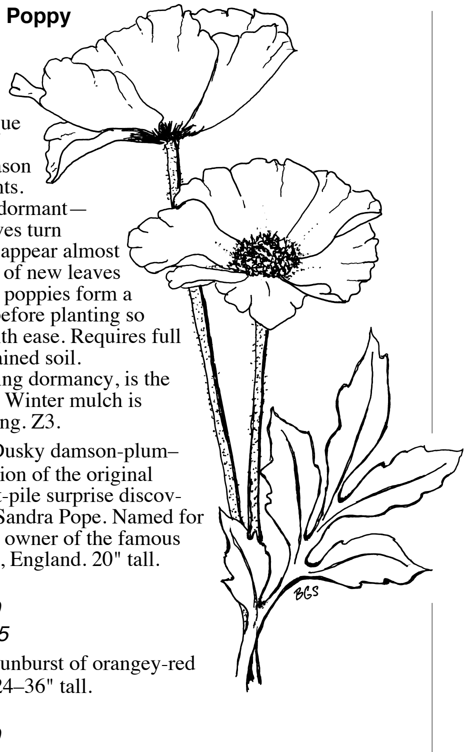
***P. s.* Maroon Tree Peony** Profusion of semi-double deep maroon blooms with yellow stamens.

***L731A**: 1 for $37.75*
***L731B**: 2 for $65.50*
***L731C**: 3 for $88.50*

***Paeonia tenuifolia* 'Rubra Plena' Fern Leaf Peony** Deep red satiny double cup-shaped flowers. Finely cut foliage looks a lot like a bushy version of the popular annual Cosmos. Prefers drier soil than the standard garden peonies, so an excellent choice for a backdrop in a rock garden. We're delighted to offer this hard-to-find peony and can't wait to establish it in our our gardens! Blooms super-early. 20" tall. Z3. (Stock has 2–3 eyes.)

***L732A**: 1 for $75.00*





***Papaver orientale* Oriental Poppy** Breathtaking clump-forming perennials features finely cut bristly frosty-green leaves and shimmering crepe-paper blossoms that give way to unique signature seedpods that are an essential component in late-season bouquets and dried arrangements. The entire plant goes summer-dormant—don't be alarmed when the leaves turn brown in early summer and disappear almost entirely by August. Basal mats of new leaves will appear in the fall. Oriental poppies form a taproot, so loosen soil deeply before planting so roots can reach the cool soil with ease. Requires full to part sun and neutral well-drained soil. Overwatering, particularly during dormancy, is the most common cause of failure. Winter mulch is recommended to prevent heaving. Z3.

***P. o.* 'Little Patty's Plum'** Dusky damson-plum–colored blossoms. A short version of the original Patty's Plum poppy, a compost-pile surprise discovered in the 1990s by gardener Sandra Pope. Named for plantswoman Patricia Marrow, owner of the famous Kingsdon Nursery in Somerset, England. 20" tall.

***L733A**: 1 for $6.50*
***L733B**: 2 for $11.00*
***L733C**: 3 for $14.75*

***P. o.* 'Turkenlouis'** A fiery sunburst of orangey-red fringed and ruffled blossoms. 24–36" tall.

***L734A**: 1 for $6.50*
***L734B**: 2 for $11.00*
***L734C**: 3 for $14.75*

***Perovskia atriplicifolia* Russian Sage** Blooms in midsummer with elegant slender spires of lavender-blue tubular flowers. Finely divided grey-green leaves are aromatic when crushed. Perovskia has one of the longest bloom times of any blue-flowered plant. Semi-woody shrub emerges slowly in spring; cut back after frost. Tolerates drought, loves heat and full sun, can't bear standing water. Likes to spread out once it gets established and it is so beautiful it deserves every foot of space it can get! Plant 24–36" apart. Grows 36–48" tall. I suspect that Zone 4 reports of winterkill are from poor drainage rather than cold, so a cautious Z4.

***L735A**: 1 for $7.25*
***L735B**: 3 for $17.75*
***L735C**: 6 for $32.00*

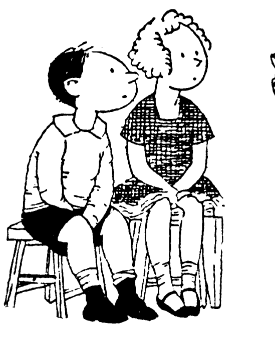
***Phlox* Garden Phlox** produces large spreading clusters of fragrant showy long-blooming flowers in mid to late summer. Wonderful color and fragrance for accents, border or naturalized area. Attracts butterflies and hummingbirds. Essential component of late-summer wedding bouquets. Extend flowering season by watering and prompt deadheading. Prefers humus-rich soil that stays cool and moist in summer, and benefits from regular sidedressing. Plant 2' apart, full sun to partial shade. Z3.

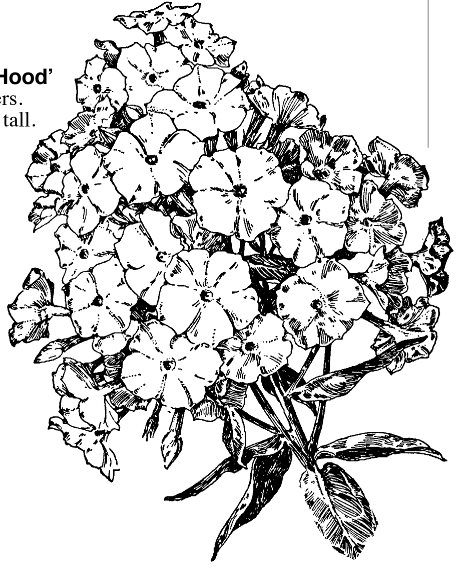
***P. amplifolia* 'Goliath'** Giant fragrant lilac-purple flowers with starry white spokes and dark eyes. The flower heads are twice the size of any phlox we've seen! 26–30" tall.

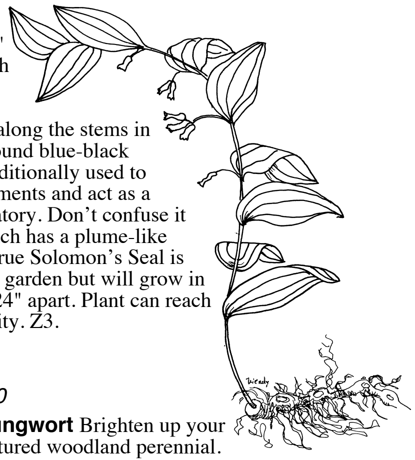
***L736A**: 1 for $6.25*
***L736B**: 2 for $10.75*
***L736C**: 3 for $14.25*

***P. paniculata* 'Red Riding Hood'** Large fragrant cherry-red flowers. Compact variety grows 18–24" tall.

***L737A**: 1 for $6.25*
***L737B**: 2 for $10.75*
***L737C**: 3 for $14.25*





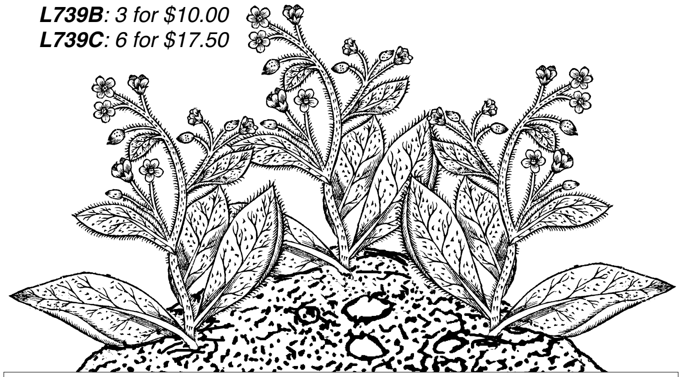


***Polygonatum biflorum* Solomon's Seal** Clumps of 3' long graceful arching stems with long narrow alternate leaves. Greenish-white bell-shaped tubular flowers dangle in rows along the stems in late spring and become small round blue-black fruits in early fall. Roots are traditionally used to strengthen weak joints and ligaments and act as a connective tissue anti-inflammatory. Don't confuse it with False Solomon's Seal, which has a plume-like flower at the *end* of the stem. True Solomon's Seal is ideal for the shade or woodland garden but will grow in full sun if you insist. Plant 18–24" apart. Plant can reach 36" tall and then some at maturity. Z3.

***L738A**: 3 for $6.50*
***L738B**: 6 for $11.25*
***L738C**: 12 for $20.00*

***Pulmonaria* 'Mrs. Moon' Lungwort** Brighten up your shade garden with this bold-textured woodland perennial. Pulmonaria blooms like a chameleon, with periwinkle-blue buds that open to charming pink flowers, creating a striking effect with both colors appearing at once on the same plant. Large ovate slate-green leaves are dressed in vivid silver-white splotches. Presents a brilliant early season contrast to blooming daffodils and emerging hostas and ferns. Plant 1–2' apart in moist soil and full to partial shade. Grows 9–12" tall with a slow but steady spread of up to 2' wide. Z3.

***L739A**: 1 for $4.00*
***L739B**: 3 for $10.00*
***L739C**: 6 for $17.50*



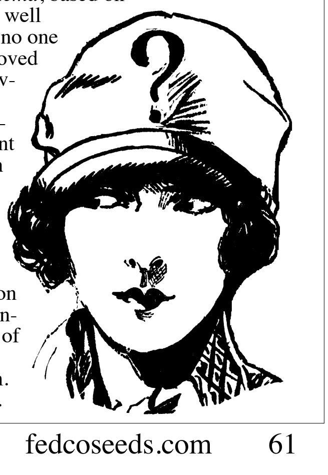
Why do botanical names change?

It's an imperfect system and this vexes many of us. We have memorized a botanical name that's been in place for a few hundred years, then it changes?! Someone redraws the map and we feel a bit lost. The fact is, botanical names have been changing ever since they were first chosen.

One reason for a name change is that an earlier version of the name surfaces. Nomenclature rules dictate that by default the earlier name is the official one. Oops. Now, we end up with synonyms, two or more different names for the same plant. This has happened a lot!

Another reason is misidentification. Oops again. We learn more about the plant's bigger family context, and the person who originally named the plant didn't have that information. Recently, there has been a rash of renaming that is a result of DNA sequencing. Prior to this technology, we relied solely on features visible by the eye or detectable by microscope. The International Botanical Congress meets every six years to settle these matters and argue over the International Code of Botanical Nomenclature.

Once in a while, there is a petition to keep the old name because it is so widely known for a very popular plant. This is the case of Chrysanthemums. To make a long story short, the common flower you find in florist shops was placed into a different genus, *Dendranthema*, based on new information. That didn't go over so well because mums are sold everywhere and no one wanted to change the name, so it was moved back to *Chrysanthemum* even though several other species of mum were split up into different genera. This kind of home-wrecking happens all the time in the plant world. Some of it makes sense but much of it is wearisome to those of us who don't geek out on the finer points of nomenclature.



The foundation for naming any plant is and always has been based on experience, observation and intimate connection with the plants. We can impose this scientific order and appreciate the usefulness of the tool, but we also have to let go of it and just be with the plants to know them. And to know how much we don't know.

Plant Signatures

Before there were books, folks read the plants. Way back in ancient times and across cultures, healers observed plants to discover their medicinal uses. People believed, and some still do, that a plant is stamped with a signature, a clue to how humans can use it. The signature might look like a part of the human anatomy it heals. Or a plant might grow in similar environmental conditions to those it balances in the body. The signature could be the soothing feeling that comes across you as wind blows through a mature stand of pine, or how the tubular stalks of elderberry resemble blood vessels. While the idea of signatures can be traced back to ancient texts, in the 16th c. Swiss physician Paracelsus systemized them for medicinal use into a Doctrine of Signatures. He said, "The art of healing comes from nature, not the physician. Therefore the physician must start from nature, with an open mind."

Some people consider the Doctrine of Signatures to be anthropocentric superstition or pseudo-science. But some are interested in examining the findings of our ancestors. Openness to making connections—intuitively, imaginatively, observationally, or scientifically—isn't silly or meaningless. Modern research into the medicinal properties of plants often validates what our ancestors figured out long ago.

Many herbalists, doctors and plant people around the world are literate in the signatures and still speak the language of herbal wisdom passed down for generations. In her book *The Language of Plants*, naturopathic doctor Julia Graves writes, "While one might raise countless intellectual debates as to its scientific worthiness, from the point of view of someone who wildcrafts and cultivates herbs, makes them into medicines, and uses those to actually heal people, those debates are irrelevant, because the practicing herbalist in the living tradition of nature knows her language."

Here are some signatures of plants we offer in the catalog. We strongly recommend speaking with an herbalist before taking any herb.

Grape: Strikingly resemble tiny bunches of tissue in the lungs called alveoli. Research shows that grapes are especially good at clearing the lungs of impurities and reducing conditions of asthma.

Walnut: Resemble little brains and the rich oils they contain have proven to be especially good for mental health.

Elderberry: Hollow stems resemble blood vessels. Elderberries support the cardiovascular system.

Hydrangea: Naturally grows in wet areas near streams and historically used to treat rheumatic complaints.

Willow: Grows in wet areas and salicin in the bark treats conditions of dampness, especially relating to joint pain and fever.

White Cedar: Grows in swamps and clears conditions of dampness particularly in the lymphatic system.

White Pine: The sound of wind blowing through a mature pine stand is as soothing as its properties in strengthening the nerves. Light airy needles help heal and air out the lungs. Pine is an expectorant and antiseptic.

Mushrooms: Cut them in half and they look like ears. They are one of the few foods that have vitamin D, which helps hearing.

Beebalm: Crown of flowers represents mental clarity and restfulness.

Bloodroot: If you have ever nicked the roots of this plant, you'll have noticed they bleed. Traditionally used for congestion of blood, specifically migraines.

Comfrey: Roots resemble bones in color and texture and are used for breaks and bruises.

Echinacea: Plants with reddish purple coloring tend to draw out toxic heat and detoxify the liver.

Goldenseal: Vibrant bright yellow roots the color of bile are used to treat sour stomach and support digestion.

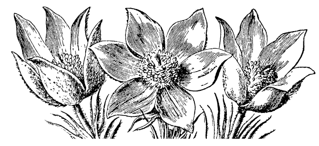
Lungwort: Used for pulmonary infections, as the common and botanical names indicate. Hairy leaves resemble the mucosa hairs in lungs, which it soothes.

Pulsatilla: It flutters in the wind, hence the common name wind flower. Treats mental changeability or restlessness.

Solomon's Seal: White roots the same color as bones help restore cartilage and heal breaks. Rhizomes resemble joints and their slimy mucilaginous properties are highly effective at lubricating them.

Swamp Milkweed: Grows in swamps and treats conditions of dampness specifically related to the kidneys.

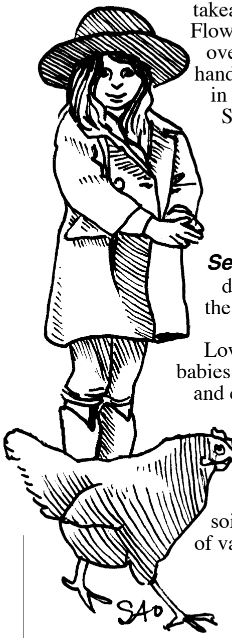
***Pulsatilla vulgaris* 'Rubra' Pasque Flower** Also known as **Wind Flower**. Frosty-green fuzzy flower stems often emerge when patches of snow are still on the ground. Soon after, large open bell-shaped dusky burgundy flowers with golden-yellow stamens bloom as the finely cut furry ferny foliage begins to form. At bloom time flower stems are typically 4–5" tall but continue to grow after blooms have passed, eventually reaching heights of 9–12", with unique spherical clusters of feathery silvery seedheads. Excellent choice for rock gardens and the front of the border. With proper care it will develop a deep extensive root system. Plant 10" apart in full sun to part shade in rich *seriously well-drained* soil. Prefers not to be disturbed once established. Z4. ($3^{1}/_{2}$" plug stock)



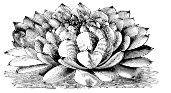
***L740A**: 1 for $3.25*
***L740B**: 2 for $5.50*
***L740C**: 3 for $7.50*

***Sanguinaria canadensis* Bloodroot** Native spring **ephemeral** with enchanting solitary $1^{1}/_{2}$" white flowers and 8–12 petals which emerge from tightly rolled leaves. Low-growing grey-green leaves unfurl into an unmistakeable lobed and scalloped palm shape spanning 4–8" across. Flowers open at night and close during the day. Forms a colony over time and is worth the wait—bloodroot is one of the most handsome woodland plants in existence. Best planted en masse in moist rich well-drained shaded woodland soil, pH 5.5–6.5. Spreading underground rhizomes exude a somewhat caustic rusty-brown sap when cut. *Wash hands after handling*. Nursery propagated. Z3.

***L741A**: 3 for $11.00*
***L741B**: 6 for $18.50*
***L741C**: 12 for $30.00*



***Sempervivum* Hens and Chicks Mix** If you've got boulders in the back forty or a rocky sandy sun-drenched spot in the dooryard, you have the makings for an amazing cascading sempervivum display. *Sempervivum* means 'always alive.' Low-growing rosette-forming succulents produce runners and babies by the boatload. Drought- and heat-tolerant beyond belief, and cold-hardy, too! Sempervivums offer up a fun way to learn about fractals and how our world works—you can plant them in a strawberry pot with the kids for a fun easy-to-care for botany/math project, or go whole hog and build a mini-boulder palace all decked out in Hens and Chicks and mosses. Performs best in super-well-drained gravelly soil with lots of sun and dappled shade. We're offering a mix of varieties including reds, greens and purples. Z3. ($2^{1}/_{2}$" pots)

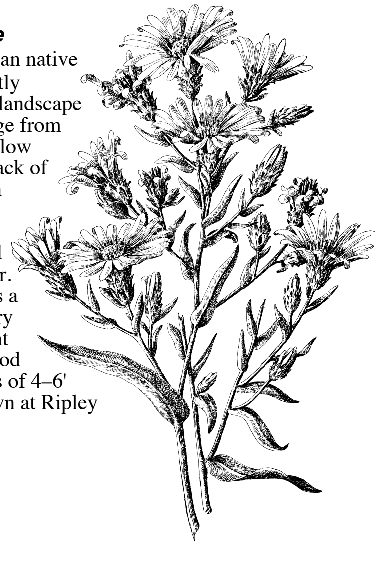


***L742A**: 1 for $3.50*
***L742B**: 3 for $8.50*
***L742C**: 6 for $15.00*

***Senna hebecarpa* Wild Senna** Also called **Partridge Tree**. Little canary-yellow flowers form dense clusters above attractive compound pea-like foliage. Imagine an unrefined version of *Baptisia australis*. According to the USDA, it is not yet known if this leguminous plant fixes atmospheric nitrogen, as so many legumes do. We do know it attracts butterflies and bees and provides food for hungry wildlife. Develops long slender dark-brown seedpods, beloved by birds. Plant a hedge of this stately sun-loving plant in the wild meadow—the seed pods burst when ripe, attracting partridge, turkeys and the like. Plant 2' apart in moist to wet soil. Full sun. Thrives in clay soils but will tolerate sandy or loamy ground. Grows 4-6' tall. Z4. **ME Grown.**

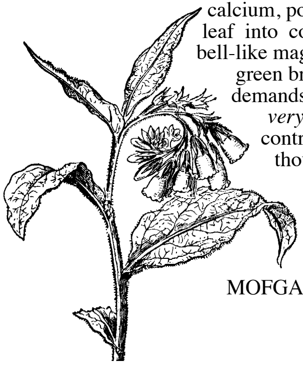
***L743A**: 1 for $6.50*
***L743B**: 2 for $11.50*
***L743C**: 3 for $15.50*

Symphyotrichum novae-angliae
New England Aster North American native with freely branching sprays of brightly colored flowers decorate the autumn landscape throughout the Northeast. Colors range from blue-purple to lavender-pink with yellow eyes. Asters add hardy grace to the back of the wild border and will naturalize on banks or in the meadow. Cut back slightly in early to mid June to induce an abundance of $1^{1}/_{2}$–2" rayed blooms from late August into October. Deer usually don't eat them. Provides a late-season source of nectar for hungry pollinators. Plant 12–18" apart in light moist humusy soil in full sun with good air circulation. Reaches grand heights of 4–6' tall! MOFGA-certified organic. Grown at Ripley Farm. Z3. **ME Grown.**



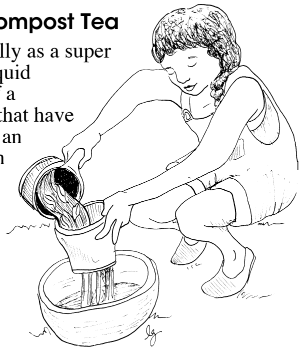
***L744A**: 1 for $7.25*
***L744B**: 3 for $18.75*
***L744C**: 6 for $33.75*

***Symphytum* x *uplandicum* 'Bocking 14' Russian Comfrey** Highly recommended as a companion plant for orchards. Makes an excellent addition to the compost pile as it is rich in silica, nitrogen, magnesium, calcium, potassium and iron. Use as mulch or turn the leaf into compost tea for your garden. Clusters of bell-like magenta-purple flowers dangle above the deep green bristled foliage. Easy-to-grow vigorous plant demands space and if the roots are disturbed *can be very invasive*; be careful where you plant it and control with regular harvest. Russian comfrey is thought to have a higher pyrrolizidine alkaloid content than the species. It is generally recommended to use *Symphytum officinale* (on page 65) when making herbal medicines. Plant 24" apart in well-drained soil, sun or shade. 24–48" tall. Our stock is MOFGA-certified organic, grown at Ripley Farm in Dover-Foxcroft. Z3. **ME Grown.**



***L745A**: 1 for $5.75*
***L745B**: 3 for $15.00*
***L745C**: 6 for $27.00*

Ripley Farm's Russian Comfrey Compost Tea

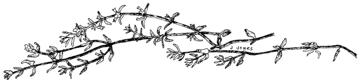


We love the Bocking 14 Comfrey especially as a super garden fertilizer when fermented into a liquid concentrate. It's really easy to make: stuff a five-gallon bucket full of comfrey leaves that have been cut and slightly wilted in the sun for an hour or two. Fill the bucket to the top with water, loosely cover with a lid and let it steep for a couple weeks, stirring it every couple days. Then strain out the remaining solids, dilute 10:1 with water and spray on your garden as a great nutrient-rich growth booster.

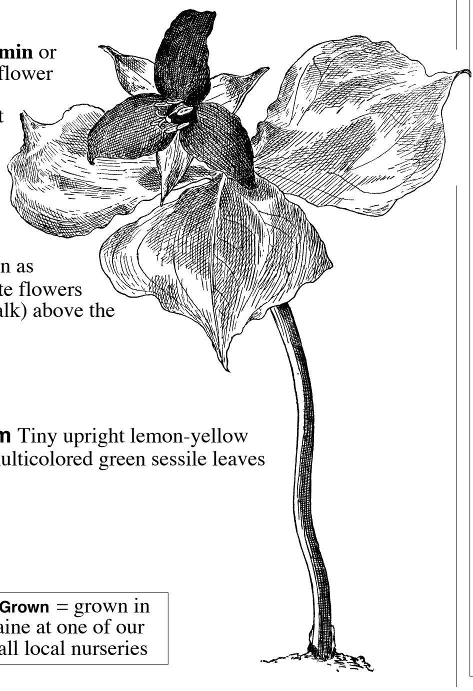
–Gene & Mary Margaret Ripley of
Ripley Farm, Dover-Foxcroft, ME

***Thymus praecox* 'Coccineus' Red Creeping Thyme** Dense flat mats of dark fragrant evergreen leaves are quickly blanketed in outstanding magenta-red flowers. One of the most rewarding groundcovers I've ever planted—each year it fills in the blank spots between the chives and sage in my herb beds and is now beginning to politely root itself into the garden pathways. The bees can't get enough of it and neither can I. Plant in full sun, in moist well-drained soil. Grows 2–4" tall. Z3.

***L746A**: 1 for $7.25*
***L746B**: 2 for $12.75*
***L746C**: 3 for $17.25*



Trillium Classic native wildflower will gradually build a quiet woodland colony if allowed to grow in peace. Spreads by seed and underground rhizomes. Native from Nova Scotia to the mountains of Georgia, west into Michigan. Prefers full to part shade. Plant 12" apart in moist rich woodland soil. Grows 8–18" tall. Z4.



***T. erectum* Red Trillium**
Also called **Stinking Benjamin** or **Wakerobin**. Our local wildflower preserve features huge patches of these velvety-soft maroon flowers.

***L747A**: 3 for $11.00*
***L747B**: 6 for $18.50*
***L747C**: 12 for $30.00*

***T. grandiflorum* Great White Trillium** Also known as **Wood Lily**. Large pure white flowers are perched on a pedicel (stalk) above the leaf whorl.

***L748A**: 3 for $11.00*
***L748B**: 6 for $18.50*
***L748C**: 12 for $30.00*

***T. luteum* Yellow Trillium** Tiny upright lemon-yellow flower petals sit on top of multicolored green sessile leaves mottled with silver.

***L749A**: 3 for $11.00*
***L749B**: 6 for $18.50*
***L749C**: 12 for $30.00*

ME Grown = grown in Maine at one of our small local nurseries

Companion Plants for the Orchard

Companion plants encourage natural processes that benefit the overall health and vitality of fruit trees. This means less work lugging around sprayers, buying fertilizer, spreading compost and worrying about pollination. Create an open invitation for pollination in your orchard by planting herbs and flowers rich with nectar sought by positive predatory insects. Build the best of both worlds by planting low-growing spreading groundcovers that also attract beneficial insects. Plant living mulches in the orchard to produce large quantities of organic matter that can be cut back annually and left to decompose around the base of your trees, enriching the soil for years to come. Companion plants serve the following functions in the orchard:

Beneficial Insect Attractors contain nectar sought by predatory insects like brachonid wasps, syrphid fly and lacewings that feed on fruit tree pests.

Mineral Accumulators have long taproots that are thought to bring up minerals from deep subsoil. Cut foliage, and use it to mulch around trees throughout the season to create nutrient-rich soil.

Living Mulches produce large quantities of organic matter that can be cut back and left to decompose around tree bases, enriching the soil.

Native Pollinator Plants are native to North America and attract native pollinators.

Nitrogen-Fixers transfer nitrogen from the air to the soil where it can be absorbed by tree roots.

Pest Confusers have bitter aromas that confuse insect pests and deter them from eating fruit.

A few considerations when planting in your orchard: Once established, companion plants do not require a lot of care. Planting companions in groups, masses or hedges is often more effective than planting individuals. Think nature! Plant woody shrubs and beneficial insect attractors along orchard borders where they can flower and thrive undisturbed out of the way of the mower. Living mulches, mineral accumulators and herbaceous nitrogen fixers can be placed closer to trees.

Top Orchard Companion Plants for 2019

***Achillea millefolium* Yarrow** Living mulch. Rich in copper, nitrogen and phosphorus. Aromatic pest confuser with bitter aroma. Excellent addition to compost piles. See pages 55 and 64 for full descriptions.

***Alchemilla mollis* Lady's Mantle** Beneficial insect attractor. Low-growing spreading groundcover. See page 64.

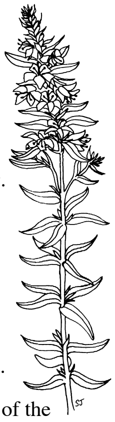
***Althea officinalis* Marshmallow** Beneficial insect attractor. See page 64.

Arnica chamissonis Beneficial insect attractor. Low-growing spreading groundcover. See page 64.

***Asclepias incarnata* Red Swamp Milkweed** Beneficial insect attractor. See page 56.

***Asclepias tuberosa* Butterfly Weed** Beneficial insect attractor. See page 56.

***Baptisia australis* Blue False Indigo** Nitrogen-fixing legume. Native pollinator plant. See page 56.



Echinacea purpurea Beneficial insect attractor. Native pollinator plant.See page 64.

***Geranium maculatum* Wild Geranium** Beneficial insect attractor. Native pollinator plant. Low-growing spreading groundcover. See page 58.

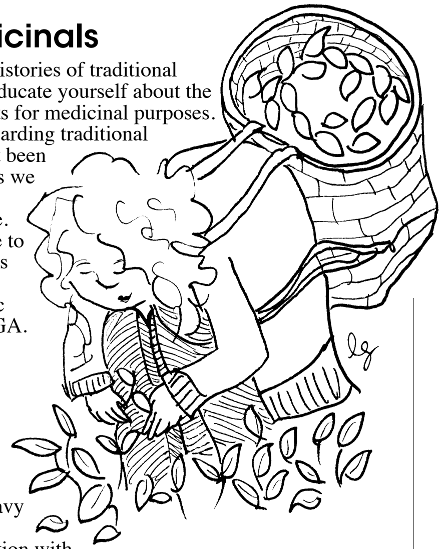
***Hyssopus officinalis* Hyssop** Beneficial insect attractor. Aromatic pest confuser with bitter aroma, long used as a companion plant in gardens and orchards. Spreading groundcover. See page 65.

***Levisticum officinale* Lovage** Beneficial insect attractor. See page 65.

***Monarda fistulosa* Wild Bergamot** or **Bee Balm** Living mulch. Native pollinator plant. See page 65.

***Symphytum* Comfrey** Mineral accumulator and living mulch. Rich in nitrogen, potassium and calcium when cut to the ground for mulch. Adds to soil fertility; makes a mineral-rich foliar spray. Predatory pest habitat. Nearly impossible to eradicate: *plant it where you want it forever* at least 4 to 15 feet away from the base of the tree. See opposite for Russian Comfrey and page 65 for standard comfrey.

Herbaceous Medicinals



The following plants have long histories of traditional medicinal use. It's up to you to educate yourself about the safety and efficacy of using plants for medicinal purposes. The statements in our catalog regarding traditional medicinal uses of plants have not been evaluated by the FDA. The plants we sell are not intended to diagnose, treat, cure, or prevent any disease.

Plants may take a year or more to establish before they flower; roots often take several years to reach harvestable maturity. The organic listings are all certified by MOFGA.

Achillea millefolium **Yarrow** Named for its use by Achilles to staunch battle wounds, has a centuries-old tradition of use as an external styptic. A natural anti-inflammatory, yarrow has been used by women to regulate the menstrual cycle, reducing heavy bleeding and easing period pain. Yarrow is often used in combination with other herbs as a cold remedy and to reduce fever. Infusion of flowering tops stimulates healthy digestion and improves circulation. White flowers bloom June through September. An excellent orchard companion and a beautiful addition to the perennial border, meadow, herb or moon garden. Plant 18–24" apart in full sun and well-drained soil. MOFGA-certified organic, grown at Ripley Farm. 24" tall. Z3. **ME Grown.**

***L750A**: 1 for $6.50*
***L750B**: 2 for $11.25*
***L750C**: 3 for $15.25*

Actaea racemosa **Black Cohosh** Also known as **Black Snakeroot** or **Fairy Candles**; formerly known as ***Cimicifuga racemosa***. This North American native provides the ultimate backdrop for the lightly shaded woodland garden. From late July into August, long arching racemes of creamy white and gold serpentine flower spikes soar 6–10' over a 3–4' mound of fine-textured green compound foliage. Diuretic and anti-inflammatory. Anti-spasmodic for cramps, pains, cramped nerves and emotions, included in many premenstrual and perimenopausal formulas. Roots contain salicylic acid. *Pregnant women avoid.* Prefers part shade, but tolerates full sun in deep moist soil. Grows well in boggy spots. Develops large clumps of rootstock so give it room to spread. Plant 3' apart in rich moist soil, part sun, part shade. Our stock is sustainably grown by Joanna Linden at Shooting Star Farm in Canaan. Z3. **ME Grown.**

***L751A**: 1 for $8.25*
***L751B**: 2 for $13.75*
***L751C**: 3 for $18.75*

Alchemilla mollis **Lady's Mantle** Enchanting tiny fans of leaves emerge in early spring and unfold into a mound of rounded fan-creased silvery grey-green foliage. Sprays of tiny yellow-green stars bloom on 15" tall stalks above the foliage. Most herbals list the medicinal variety as *A. vulgaris*; ornamental growers list this very similar species as *A. mollis* in this botanically bewildering genus. *A. vulgaris* tends toward a looser more spreading habit than the tighter more upright *A. mollis*. Both varieties have traditionally been used as a poultice to tone and firm breast tissue and to promote fertility. Lady's Mantle has a new claim to fame as an orchard companion plant. When planted at the base of old apple trees, this shade-loving plant attracts hordes of beneficial insects and acts as a beautiful low spreading groundcover. Prefers part shade. Plant 12" apart in moist soil. MOFGA-certified organic, grown at Ripley Farm. Grows 12–18" tall. Z3. **ME Grown.**

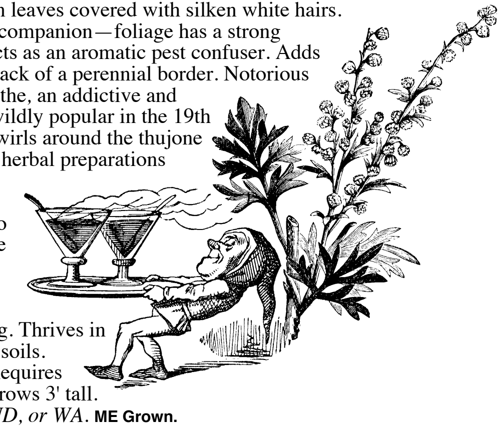
***L752A**: 1 for $6.50*
***L752B**: 3 for $17.00*
***L752C**: 6 for $30.50*

Althaea officinalis **Marshmallow** Small delicate lavender-white flowers with darker lavender stamens appear up and down the stalks of this beautiful towering medicinal plant. I've been drawn to marshmallow ever since I watched herbalist Deb Soule rub its soft velvet leaf against her cheek and explain how much the ruby-throated hummingbird appreciates the nectar of marshmallow flowers. The leaf, flower and mucilagenous roots are traditionally used to soothe the mucous membrane linings of the lungs and digestive tract, and to calm the lining of the urinary tract. Leaf is best used *fresh* for tea, and the dried roots are best when soaked overnight in cool water for tea. Harvest 4-year-old roots for medicinal use. Wonderful in a hedgerow and magnificent planted with black cohosh as they often blossom together in late July and into August. Readily self-sows. Plant 1–2' apart in light moist soil, part sun, part shade. 5–8' tall. Our certified-organic stock is grown at Ripley Farm. Z4. **ME Grown.**

***L753A**: 1 for $6.50*
***L753B**: 3 for $17.00*
***L753C**: 6 for $30.50*

Arnica chamissonis Low-growing spreading groundcover with bright yellow daisy-like flowers used externally in oils and salves to treat bruises, sprains and inflammation. Never take internally except in homeopathic doses. In the right conditions a few plants will develop into a dense long-lived patch. Beneficial insect attractor. Blooms in July. Grows successfully in our climate and is a generally accepted medicinal substitute for *A. montana*. Plant in full sun 1' apart in moist well-drained soil. Lauren Cormier sustainably grew these North American natives. Z3. **ME Grown.**

***L754A**: 1 for $7.50*
***L754B**: 2 for $12.75*
***L754C**: 3 for $17.25*

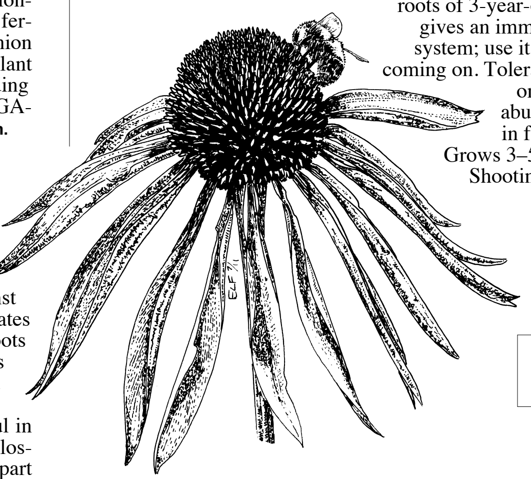


Artemisia absinthium **Wormwood** Aromatic bitter herb native to Europe. Traditionally used as a digestive stimulant, mild antidepressant, potent insect repellent, and treatment for intestinal parasites. Beautiful branching shrub-like woody plant with tall stiff stems and alternate finely cut silvery-grey-green leaves covered with silken white hairs. Useful as an orchard companion—foliage has a strong sage-like scent and acts as an aromatic pest confuser. Adds a frosty color to the back of a perennial border. Notorious as the source of absinthe, an addictive and controversial drink, wildly popular in the 19th c. Legal contention swirls around the thujone content in drinks and herbal preparations flavored with wormwood essential oil, which is known to be safe only in minute doses and potentially toxic in excess. Deadhead to prevent unwanted self-seeding. Thrives in full sun and poor dry soils. Plant 24–36" apart. Requires excellent drainage. Grows 3' tall. *Cannot ship to CO, ND, or WA.* **ME Grown.**

***L755A**: 1 for $6.50*
***L755B**: 2 for $11.25*
***L755C**: 3 for $15.25*

Astragalus membranaceus **Chinese Milk Vetch** Root is *huang qi* in China. Deep-rooted leguminous plant forms an upright bush with many stems, each thickly covered with tiny pinnate leaves and small arching racemes bearing rows of whitish-yellow flowers. This important Chinese medicinal, when used over many months, is known to rebuild the immune system while combating exhaustion. Long-term tonic use is believed to increase stamina and improve resistance to cold temperatures. Harvest 4- to 6-year-old roots in fall. Plant in full sun, 12" apart in deep gravelly well-drained soil. 18–36" tall. Our certified-organic stock is grown at Ripley Farm. Z4. **ME Grown.**

***L756A**: 1 for $8.75*
***L756B**: 2 for $15.00*
***L756C**: 3 for $20.25*



Echinacea purpurea **Purple Coneflower** *Echinos* means 'spiny' and the coneflower's spiny seedheads are a beautiful coppery yellow-brown, surrounded by a single row of reflexed lavender-purple petals. This North American native attracts butterflies and other beneficial insects. Tincture the roots of 3-year-old plants for a remedy that gives an immediate boost to the immune system; use it when you feel a cold or flu coming on. Tolerates wind, heat and drought once established. Will reseed abundantly. Plant 20–30" apart in full sun and light sandy soil. Grows 3–5' tall. Sustainably grown at Shooting Star Farm. Z3. **ME Grown.**

***L757A**: 1 for $7.25*
***L757B**: 2 for $12.75*
***L757C**: 3 for $17.25*

ME Grown = grown in Maine at one of our small local nurseries

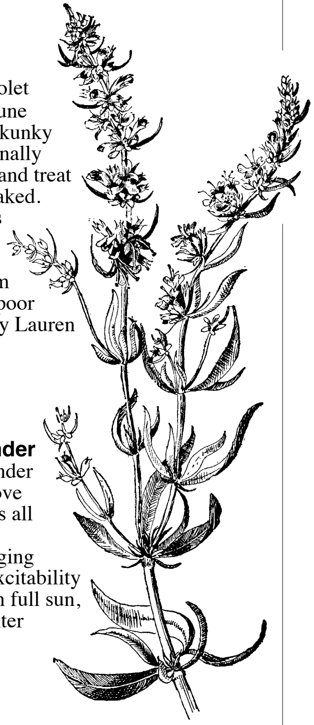
In the forest, I still know how to become one with a landscape rich with a thousand mysteries. The forest permits me to capture the secrets of the invisible, of which we are the trustees. These secrets will soon become precious compasses for humanity.
–Bernadette Rebienot, quoted in *Grandmothers Counsel the World* by Carol Schaefer

***Glycyrrhiza glabra* Licorice** Sweet and soothing roots contain glycosides similar to the body's own natural steroids. Beneficial for revitalizing adrenal glands, good for colds and bronchitis, reduces throat irritation, yet acts as an expectorant and anti-spasmodic. Adds sweetness, harmony and palatability to nearly every herbal combination. Give it lots of room and keep it weeded so it can create the roots and runners you want. Roots penetrate deeply and take complete possession of the soil. Runners sometimes travel great distances before sending up a shoot—if the soil is loose you can pull up errant runners, coiling them like rope to hang in wreaths above the woodstove, convenient for winter teas. Leguminous plant fixes nitrogen in the soil. You can plant small vegetables like onions, lettuce and beans in the intervening spaces during the first and second year of growth. Plant 24–36" apart in sandy well-drained soil. Full sun. Mulch to prevent heaving. Roots attain harvestable size in 3 to 4 years. Grows 3–4' tall. Our stock is certified organic, grown at Ripley Farm. Z4. **ME Grown.**

__L758A__: 1 for $8.75
__L758B__: 2 for $11.25
__L758C__: 3 for $15.25

***Hydrastis canadensis* Goldenseal** Native to Eastern hardwood forests. Plants have upright stalks, typically forked into two stems, each with a deeply incised dark green leaf with 5–7 lobes and toothed edges. A unique white flower with a dozen or so pistils appears above the foliage in spring and matures into a raspberry-shaped red berry that typically contains one or two shiny black seeds. Requires moist cool woodland soils and deep shade. Harvest root after seeds ripen in fall. Powerful medicinal is at risk of over-harvesting in the wild. 6–12" tall. Nursery propagated. Z3-6.

__L759A__: 3 for $16.75
__L759B__: 6 for $29.00
__L759C__: 12 for $52.00



***Hyssopus officinalis* Hyssop** Vivid blue-violet double-lipped flowers on spikes blossom from June through September. Infusions of the pleasantly skunky dark green leaves and flowering tops are traditionally used as tea or made into syrup to ease digestion and treat chronic respiratory infections after they have peaked. Hyssop increases the production of liquid mucus and acts as an expectorant. Thrives in dry soil, useful on slopes and any sunny difficult place. Makes a beautiful hedge that will draw bees from far and wide. 12–20" tall. Plant 12–24" apart in poor soil, full sun to light shade. Sustainably grown by Lauren Cormier. Z3. **ME Grown.**

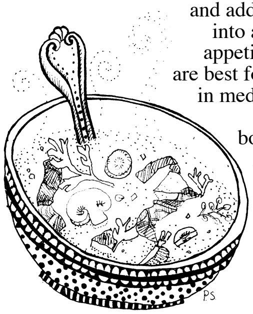
__L760A__: 1 for $7.25
__L760B__: 2 for $12.75
__L760C__: 3 for $17.25

***Lavandula angustifolia* 'Munstead' Lavender** Considered the hardiest lavender with light lavender flowers. Sweet-scented flower spikes extend above aromatic silvery-green lanceolate leaves. Blooms all summer. Makes a nice border, rockery, slope or specimen plant. Compact habit lends itself to edging walkways. Traditionally used to calm nervous excitability and relieve muscle tension. Plant 12–24" apart in full sun, in moist *well-drained* soil. Mulch to prevent winter heaving. 16–18" tall. Z4.

__L761A__: 1 for $6.75
__L761B__: 2 for $11.50
__L761C__: 3 for $15.25

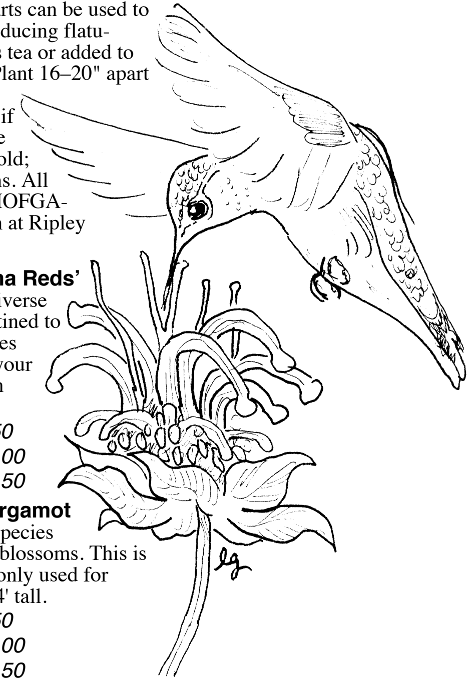
Levisticum officinale Lovage Beneficial insect attractor. Glossy green leaves have a strong celery taste and can be used to flavor soups, stews and casseroles. Looks like a giant celery plant with toothed compound leaves, greenish-yellow umbelliferous flowers and small oval seeds. Crush seeds and add to bread and pastries; candy the stems and roots into a sweet medicinal syrup that is said to restore the appetite and revive the love of life. Second-year plants are best for drying. Formerly used to mask the bitter herbs in medicinal concoctions. Makes a dramatic architectural element in a decorative deliciously scented border. Plant 24–36" apart in full sun to part shade in rich moist well-drained soil. Grows 6' tall. Z3. *Pregnant women avoid.* **ME Grown.**

__L762A__: 1 for $7.25
__L762B__: 2 for $12.75
__L762C__: 3 for $17.25



Why is Fedco selling weeds? Comfrey, valerian, Rosa rugosa, blackberry, kiwi, horseradish. Some native, some not. Yep, they can become nuisances if we aren't careful. We weigh the pros and cons of each plant and aim to provide info that will help all of us to garden mindfully. Sometimes we learn something new in our evaluations and decide to take a plant out of the catalog. We hold on to others because we think they are amazing assets to our gardens, and with thoughtfulness they can be cultivated and contained.

***Monarda* Bee Balm** Also called **Bergamot** or **Oswego Tea**. Beloved by bees, butterflies and one of the best hummingbird magnets nature has to offer! Wild and wily flowers form with tubular petals on pincushion heads borne above colorful bracts in July and August. Aromatic foliage. Good for borders, for wet areas and for cutting. Infusion of the aerial parts can be used to improve digestion by reducing flatulence. Delicious used as tea or added to meat and bean dishes. Plant 16–20" apart in light shade in moist soil. Thrives in full sun if given adequate moisture or mulched with leaf mold; tolerates most conditions. All of this year's stock is MOFGA-certified organic, grown at Ripley Farm. Z3. **ME Grown.**



***M. didyma* 'Panorama Reds'** Fabulous blooms in a diverse range of red shades destined to attract scads of butterflies and hummingbirds for your cats and kids to chase in vain. 3–4' tall.

__L763A__: 1 for $6.50
__L763B__: 3 for $17.00
__L763C__: 6 for $30.50

***M. fistulosa* Wild Bergamot** Our native wildflower species with aromatic lavender blossoms. This is the species most commonly used for medicinal purposes. 2–4' tall.

__L764A__: 1 for $6.50
__L764B__: 3 for $17.00
__L764C__: 6 for $30.50

***Symphytum officinale* Comfrey** Also called **Knitbone**. Well known for its skin-soothing properties. Contains allantoin, promotes healing of skin and bone; also demulcent for lung and throat. Clusters of bell-like pinkish purple flowers dangle above the deep green bristled foliage. Highly recommended as an orchard companion. Research on comfrey is inconclusive, but most agree that this species is the one to use medicinally. Easy-to-grow vigorous plant demands space and *can be very invasive*; be careful where you plant it and control with regular harvest. Plant 16–24" apart in well-drained soil, sun or shade. 24–48" tall. Z3. **ME Grown.**

__L765A__: 1 for $4.50
__L765B__: 3 for $11.25
__L765C__: 6 for $20.25

When Planting Comfrey
Choose a site that will never see a rototiller or you will live to regret it!

***Valeriana officinalis* Valerian** A strong and upright plant with small white or rosy flowers in flat clusters above glossy pinnate leaves. Roots traditionally used as an anti-spasmodic, nervine and sedative. Often used for sleeplessness, anxiety and other nervous complaints. Divide or harvest thick rootstock every 4 to 5 years. Plant 12–15" apart in moist well-drained soil in full sun. 2–4' tall. Our stock is certified organic, grown at Ripley Farm. Z3. *We cannot ship to CT.* **ME Grown.**

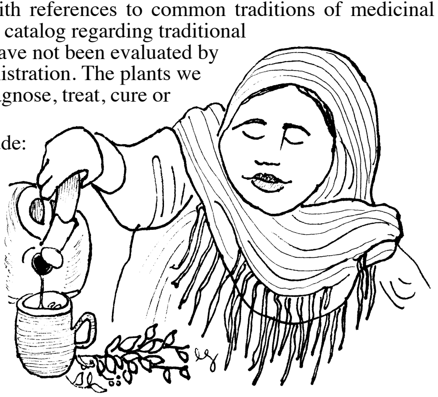
__L766A__: 1 for $7.25
__L766B__: 2 for $12.50
__L766C__: 3 for $16.75

ME Grown = grown in Maine at one of our small local nurseries

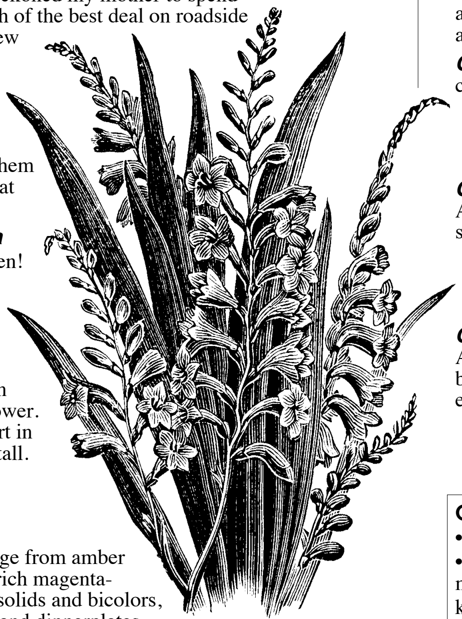
Traditional Medicinal Use and the FDA

Aside from the medicinal plants listed here, you will find other plants throughout the catalog with references to common traditions of medicinal use. The statements in our catalog regarding traditional medicinal uses of plants have not been evaluated by the Food and Drug Administration. The plants we sell are not intended to diagnose, treat, cure or prevent any disease.

Some of these plants include:
Asclepias
Bearberry
Blueberry
Elderberry
Cranberry
Hops
Rose
Solomon's Seal
Wintergreen
Witch hazel
Eastern White Pine



Tender Summer Bulbs Spring-planted bulbs offer wonderful variety to the cutflower market and are a staple in old-fashioned gardens. Once upon a time, back roads beckoned my mother to spend many a summer Sunday in search of the best deal on roadside dahlias, glads and lilies. Every few miles she would find buckets brimming with blooms for 10¢ a stem. Nowadays it's more like $1. Spring-planted bulbs are not hardy to northern climes. Smart and thrifty people lift and store them over the winter; the rest of us treat them as annuals.

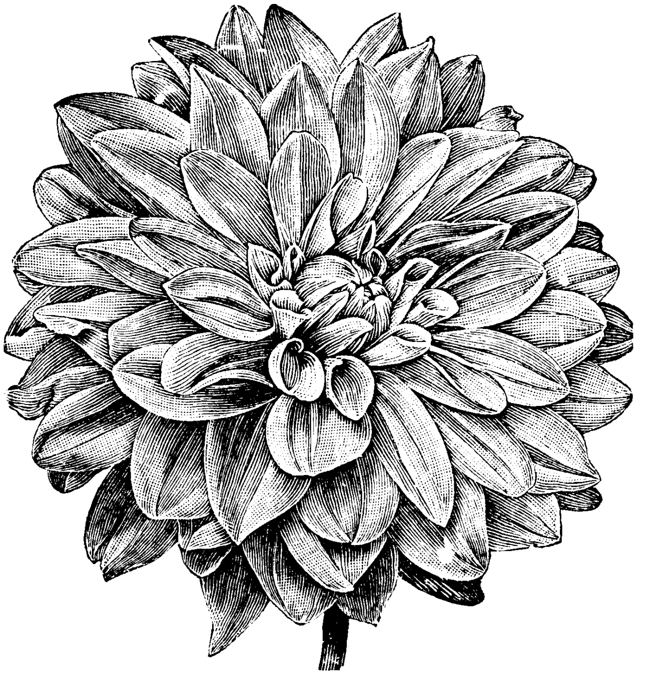


***Crocosmia* x *crocosmiiflora* 'Lucifer'** Just glows in the garden! Midsummer sprays of bright red flowers open from bottom to top on long arching bronze stems, like bursts of flame above gladiolus-like foliage. *Lucifer* is Dutch for 'match.' Grows well in pots. Makes a long-lasting cutflower. Plant in full sun, 3" deep, 3" apart in moist well-drained soil. 24–36" tall.

***L767A**: 10 for $3.50*
***L767B**: 20 for $6.00*
***L767C**: 50 for $13.25*

***Dahlia* Sunset Mix** Colors range from amber to coral, rose to ruby to a warm rich magenta-purple. A grand combination of solids and bicolors, cactus, semi-cactus, decoratives and dinnerplates. Provides endless displays of breathtaking blossoms in a vast array of sizes, shapes and colors, steadily blooming from midsummer till frost—adding incredible late-season value to the cutting garden. Native to hot parts of the Americas and first developed as a food crop, ornamental dahlias are descended from years of breeding and crossing *D. pinnata* and *D. juarezi*. To overwinter, dig tubers before the last frost, dry them off and store them in a well-ventilated cool (35–45°) dark dry place. In spring after danger of frost, plant 3–4" deep, 12–24" apart. Set the tubers flat with eyes facing up. Grows best with 3–4 hours of direct sun per day, but will tolerate conditions from full sun to light shade. Sizes in this mix will range from 36–44" tall.

***L768A**: 3 for $12.75*
***L768B**: 6 for $22.00*
***L768C**: 12 for $40.00*

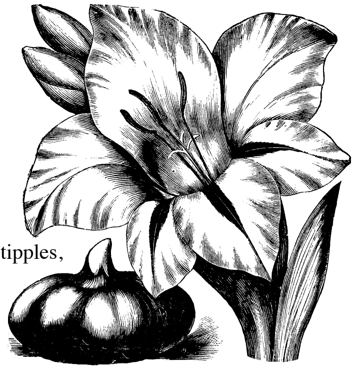


> We re-define species supposed to be well understood. We are more and more convinced that we understand nothing in the sense of finality. Our successors will disagree with many of our findings; we wish them well… Nature has no strait-jackets. Plants are plastic. They vary, often for reasons we do not know. We could not have a stable invariable nomenclature even for buttons unless for all time we could control the materials from which they are made, the machines that make them, the persons who want them.
> –Liberty Hyde Bailey, from *How Plants Get Their Names*

***Gladiolus* Sword Lily** Showy summer bloomer excels as a cutflower. Each stalk is covered with 10 or more open funnel-shaped flowers that bloom from bottom to top. Named for their sword-like leaves; a *gladiolus* is a small Roman sword. Each stalk blooms for about a week, roughly 8 weeks after planting. 36" tall.

***G.* Blue Moon Mix** Brilliant blue-violet color combinations for your cutflower fantasies.

***L769A**: 10 for $7.25*
***L769B**: 20 for $12.75*
***L769C**: 50 for $28.00*



***G.* Ravishing Reds Mix** A rambunctious combination of red shades and variations.

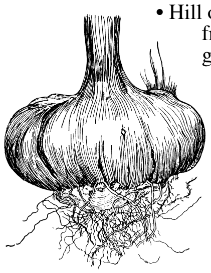
***L770A**: 10 for $7.25*
***L770B**: 20 for $12.75*
***L770C**: 50 for $28.00*

***G.* Large-Flowering Glad Mix** A mercurial mix of colors, stripes, stipples, bicolors, tricolors, and everything else under the sun—what fun!

***L771A**: 10 for $4.50*
***L771B**: 20 for $7.75*
***L771C**: 50 for $17.25*

Gladiolus Planting Guide

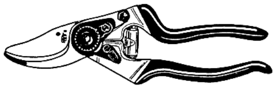
- Plant corms in full sun 4–6" deep and 6–8" apart after the last spring frost.
- Stagger plantings for a long season of blooms: First planting in early to mid-May, then again every two weeks through mid June. This schedule will keep the flowers coming July through August.



- Hill or stake the corms at planting time to keep the plants from keeling over when the foliage and flower spikes get top heavy.
- Mulch with straw to retain even moisture and prevent weeds.
- Cut the stalks when 2–3 blossoms have opened, taking care to spare the leaves, which feed the developing corm.
- To overwinter: dig up the corms after the tops have died, discard the old one, clean the new one, allow it to dry off, and store them in paper bags in a well-ventilated cool (35–45°) dark dry place.

Top-Quality Orchard and Horticultural Supplies Available Year-round at Organic Growers Supply!

Come pick up supplies at our Organic Growers Supply warehouse on the Bellsqueeze Road in Clinton, ME, or order online at **fedcoseeds.com/ogs** or through our paper Seed catalog to have these orchard essentials shipped to you. We've expanded our selection to cover your orcharding needs.



- Grafting Tools, Kits & Supplies for righties and lefties
- Felco Pruners & Pruning Saws
- Silky Pruning Saws
- Ratcheting Pruners & Loppers
- Telescoping Fruit Picker
- Deluxe Picking Bucket & Harness
- Soil Testing & Fertilizer Recommendation Service
- Blueberry Booster Mix for planting and fertilizing
- Ancients Rise Fertilizer Mix for revitalizing old fruit trees
- Fruition Mix for fertilizing established fruit trees
- Fall Fruit Tree Prep Mix
- Hole-istic Spring Planting Mix
- Traps, Lures & Sprays for orchard pests
- Fencing, Netting, Tree Guards & other mammal repellants
- Holistic Orchard Spray Kit (à la Michael Phillips!)
- SOLO® Backpack Sprayer
- Wollastonite—soluble-grade calcium silicate
- Neem & Karanja Oils
- Orchard Crop Irrigation Starter Kit
- Orcharding Books
- And more!

Organic Growers Supply
and **Fedco Seeds**
warehouses are open
Tuesday, Wednesday & Thursday
from 9 to 3 year-round.

(Holidays & rare exceptions
are noted on our website.)

When you get your order: Immediate Care

When your new trees and shrubs arrive, they need to be planted as soon as possible. Don't be deterred by snow. If you can dig a shovel into the ground, plant your trees. If you wait until spring is in full swing, your plants might become stressed and have a hard time recovering.

Sometimes frozen ground makes immediate planting impossible. When this is the case, follow the instructions below and all will be well. **Why do we send plants even when there is snow on the ground?** The weather may be fickle but we must be steady. Bare-root plants need to move out of storage and travel to their permanent homes before or as they are breaking dormancy, but not much later. For our system to work, we must follow a tight shipping schedule regardless of regional weather conditions. We begin shipping late March and finish mid-April, sending orders by climate zones, warmer zones first.

DO NOT ALLOW ROOTS TO DRY OUT AT ALL!!!

If you can't plant immediately and are unable to store or heel in plants as instructed below, ordering bare-root plants may not be right for you.

Planting Woodies Within 48 Hours

Leave the plastic wrapping around the root ball. Add some water to remoisten the packing material and store your trees and shrubs in a cool shaded place like a shed, barn or cellar. Avoid heat and sunlight.

If You Cannot Plant Within 48 Hours

You can keep plants for a week or two by following one of these temporary measures and continuing to water as needed.

- Open your package and inspect for damage. Fold the plastic back from around the tops. Keep the wet shredded newspaper around the roots and re-wrap the plastic around the root ball, packing firmly to eliminate air pockets. Water as needed to keep the roots moist, but don't let them stand in water. Keep the trees in a cool shaded or dark place like a shed, barn, cellar or garage but don't allow the plants to freeze before you get them in the ground. Avoid heat and sunlight.
- You could also "heel in" your plants temporarily in a protected cool shady spot. Dig a trench or turn back an appropriate amount of earth and bury the roots; tamp firmly to remove air pockets. Water thoroughly. Plant as soon as possible.

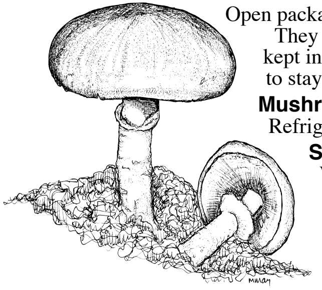
Caring for Other Plants Until Planting Time

Asparagus

Store asparagus roots dry and uncovered in a cool shaded place.

Hops

Refrigerate slightly moistened rhizomes in a plastic bag until planting.



Horseradish & Rhubarb

Open package slightly to allow the plants to breathe. They should be fine left in their packaging and kept in a cool place (ideally 35–50°). They want to stay moist but not wet.

Mushroom Spawn

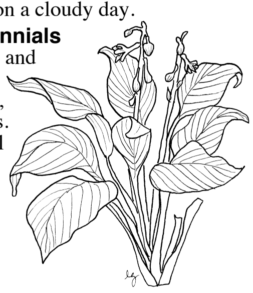
Refrigerate in packaging until ready to use.

Strawberries

We ship with the roots slightly on the dry side. If it's going to be a while until planting, mist the roots and re-cover. Refrigerate until you are ready to plant. When it's time to plant, do it in the evening or on a cloudy day.

Herbaceous Perennials

Open bags and check the stock immediately. Roots and crowns should be firm and pliable, not squishy or brittle. If they are slightly dry, add a little water, or, if they are going to be potted up soon, wet the roots. Generally, a little surface mold is harmless and will not affect the plant's future performance. Pot up crowns and roots; **do not plant directly outdoors**. If you cannot pot the crowns up immediately, store them in a cool (35–40°) location for a short time. **See page 55 for full planting instructions.**



The Perfect Tree Label

Commercially available garden labels do not last. Permanent marker always fades. Aluminium tears off in the wind. And so on. Now, we make our own. We use vinyl siding. Vinyl siding works so well, we should remove it from all the houses in the world and make it all into plant labels. It's inexpensive, or easily salvaged, and you can make dozens from a single piece of siding. Cut siding into strips using a utility knife. Snip strips to length using hand pruners. Drill a hole at one end. Attach with wire. Write information on labels with pencil, NOT a marker. Pencil will last for decades.

TREE PLANTING AND CARE

The basics of tree care outlined here are meant to get you going. Obviously, we can't tell you everything you need to know in a few pages. Some specific information, like location or soil preferences of particular plants, is in the item descriptions. A soil test is useful in determining the specific needs of your site. Fedco's Organic Growers Supply offers a soil testing and fertilization recommendation service. Learn more at **fedcoseeds.com/ogs**.

Reading, observation, trial and error, and talking with other growers and with extension agents can expand your knowledge of trees and shrubs. Consult the OGS book list for recommended reference books. Also, find useful links at our website, **fedcoseeds.com/trees**.

General Planting Directions for Trees and Shrubs

The best way to ensure your plants will thrive is to follow cultural requirements. Choose the right site for the plant. Add soil amendments only as needed. Many native plants don't require any fertilization. Fruit trees may need more. (See next page for fruit tree fertilization recommendations.)

To reduce transplant shock, plant on cool cloudy days in the early morning or late afternoon. Soak roots of deciduous trees and shrubs for up to 24 hours before planting, but not longer. Keep the roots from drying out; even a few minutes in the sun and breeze can kill a tree or shrub. Keep them watered and covered until the moment you set them in their planting holes!

Follow these steps for planting:

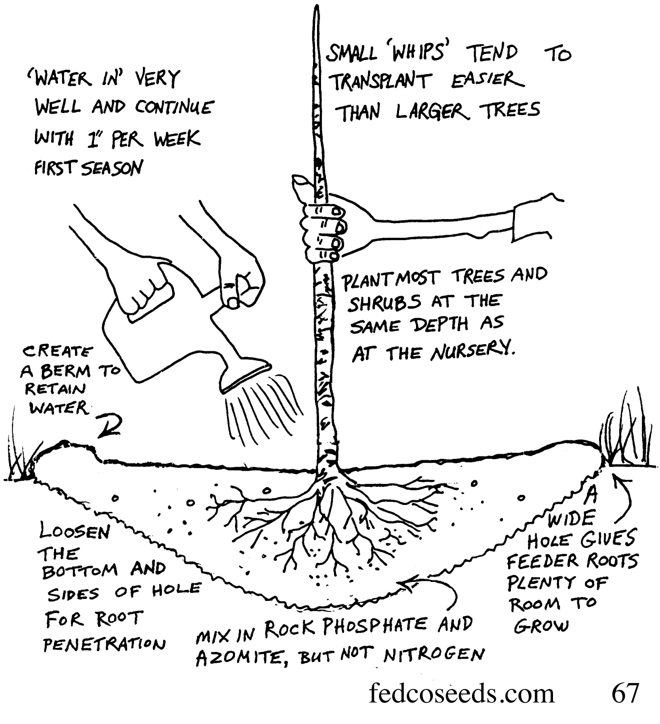
1. **Dig a large hole**, at least twice as wide and about as deep as the root system. Most roots grow laterally and need plenty of room to spread out. Your trees will benefit if the hole is at least 3' wide.

2. **Loosen up the soil** at the bottom of the hole and especially around the sides. For fruit trees, if you haven't used a deluxe fall preparation, you may add a 3-lb bag of our planting mix (available from the **Organic Growers Supply** section of the Fedco Seeds catalog), or well-aged compost and mineral fertilizers like rock phosphate or azomite, but *not* manure or other nitrogen sources. Incorporate into the soil, then make a mound at the bottom of the hole over which to spread the roots.

3. **Examine the plant for a "dirt line"** or a change in bark color indicating nursery depth. (This is different from the graft line.) Generally, you should plant trees and shrubs at the same depth they grew in the nursery. Set the plant in the hole and spread the roots out around the mound. Make sure the roots are not circling in the hole. It's better to trim roots a bit than coil them. Hold the plant at the right depth as you backfill the soil around it. Tamp firmly to remove air pockets.

4. **Water immediately.** Don't skimp on the initial watering; make sure there's plenty to settle in all the loosened soil. Wiggle the trunk as the water seeps in to ensure no air pockets remain around the roots. Leave a berm around each tree so water will not run off. Keep trees well watered throughout the first summer. They require the equivalent of 1–2" rain per week. A good soaking is effective; sprinkling is not.

5. If you want to remember which varieties you planted, paint a map of the orchard on your wall, or replace the plastic Fedco plant tags with permanent vinyl tags. See below left.


'WATER IN' VERY WELL AND CONTINUE WITH 1" PER WEEK FIRST SEASON
SMALL 'WHIPS' TEND TO TRANSPLANT EASIER THAN LARGER TREES
PLANT MOST TREES AND SHRUBS AT THE SAME DEPTH AS AT THE NURSERY.
CREATE A BERM TO RETAIN WATER
A WIDE HOLE GIVES FEEDER ROOTS PLENTY OF ROOM TO GROW
LOOSEN THE BOTTOM AND SIDES OF HOLE FOR ROOT PENETRATION
MIX IN ROCK PHOSPHATE AND AZOMITE, BUT NOT NITROGEN

Choosing a Site for Fruit Trees and Berries

The best sites for fruit crops have well-drained fertile soils, protection from wind, good air drainage and full sun. A gentle slope and 6–8 hours of full sun per day is ideal. Good air flow will moderate frosts and fungal disease. If possible, avoid "frost pockets."

Sunny south- or west-facing slopes are not advisable for less hardy varieties. These slopes tend to warm up before the danger of frost has passed. Trees may flower prematurely and then be damaged by frost, causing loss of fruit. South and west slopes may also have widely fluctuating early spring temperatures that can damage less hardy trees.

Soil pH for fruit trees should be between 5.5 and 8.0, towards the lower end for apples, the higher end for peaches, and in the middle for others.

Fruit species have optimal space requirements. See chart on next page.

Do not plant trees where power lines will interfere with them.

Fall Preparation or Spring Initial Feeding for Fruit Trees

If you're interested in preparing locations for your trees this fall, or for feeding newly planted fruit trees, the following amendment recipe should address most sites in the eastern U.S., which tend to be acidic and moderate to low in calcium and phosphorus. To order any of these products, refer to the **Organic Growers Supply** section of our Seeds catalog or website.

Deluxe Fall Preparation Method

Without digging the hole, cover an area 4–6' in diameter with:

5 lbs gypsum or Hi-Cal lime
5 lbs colloidal phosphate (short-term calcium and phosphorus)
5 lbs azomite (long-term minerals and trace minerals)
5 lbs granite meal or greensand (for improved soil texture)
2–3 lbs menefee humates (aids mineral and rock-powder breakdown)

For building high levels of humus, also add:

2 lbs alfalfa meal
2 lbs bone char or bone meal
2 lbs kelp meal
2 lbs blood meal
100 lbs compost (1/8 yard)
BioDynamic preps (optional)

Cover with a 3–4" mulch of lawn clippings, leaves or "brush" chips, which will smother the sod, conserve moisture, prevent leaching and provide a habitat for soil organisms to break down the recipe. In the spring, pull back the mulch and dig your tree hole, incorporating the mineral supplements and compost into the backfill.

If you didn't get around to fall prep, you can apply this same mix as a mulch to your newly planted tree in the spring.

Simpler Method

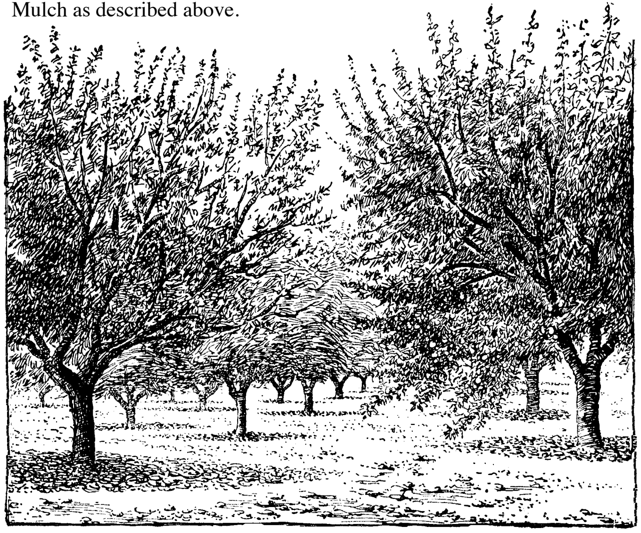
Forgo the soil amendments and simply pile 1–2 wheelbarrows of compost on each planting-hole site. If you live by the ocean, add a couple wheelbarrows of seaweed. Then cover with mulch. In the spring, pull back the mulch and plant your fruit tree, incorporating the compost into the hole as you dig.

Feeding Older Fruit Trees

Cover the surface of the ground out to the tree's drip line with the same materials listed above. For larger trees (five years and older) increase the mineral amount to 10–15 lbs each. For ancient trees you can use up to 25 lbs of each mineral in a ring beneath the drip line.

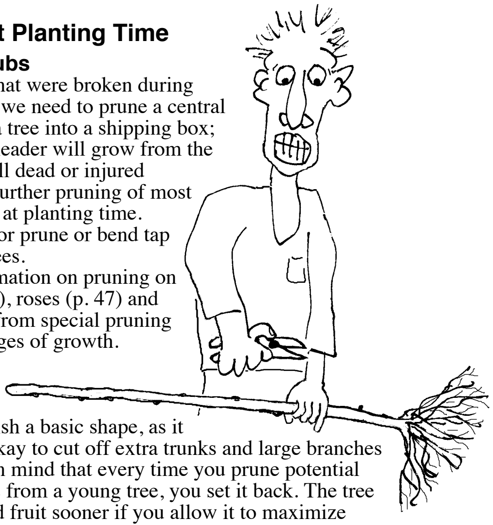
For revitalizing older fruit trees, you could also consider using our Ancients Rise fertilizer mix from Organic Growers Supply.

Mulch as described above.



Sure, you can name a tree, categorize it, safely identify it. But that tree exists, living the fullness of its quiet life, even if in its long history no man ever stood before it and labeled it… It knows itself already and mysteriously encounters the sun each day, nameless.
–Ivan M Granger, from his website poetry-chaikana.com

Initial Pruning at Planting Time



All Trees and Shrubs

Prune any branches that were broken during shipping. Sometimes we need to prune a central leader in order to fit a tree into a shipping box; don't worry—a new leader will grow from the topmost bud. Prune all dead or injured branches and roots. Further pruning of most trees is not necessary at planting time.

Do not prune tops or prune or bend tap roots of nut or oak trees.

Find general information on pruning on p. 43. Conifers (p. 33), roses (p. 47) and lilacs (p. 50) benefit from special pruning especially in later stages of growth.

All Fruit Trees

Avoid pruning young trees except to establish a basic shape, as it delays bearing. It's okay to cut off extra trunks and large branches as needed, but keep in mind that every time you prune potential leaf-bearing branches from a young tree, you set it back. The tree will grow quickly and fruit sooner if you allow it to maximize photosynthesis. Once it begins to fruit, you can prune annually. Always remove suckers or root shoots.

On peaches and plums, the trees may want to develop 2–4 leaders, or an open-vase shape. Always prune just above a good strong bud that faces a direction you'd like your branch to grow. On apple and pear trees, you may choose to either leave the central leader alone and let it grow or cut it back according to the instructions below. Either way is acceptable; it's a matter of personal preference.

Apple Trees

Apple trees will almost always benefit from light intial pruning to establish shape. After that, refrain from pruning until the tree begins to fruit.

- **Year one (initial planting time)**: If the tree is a branch-less "whip," you may cut the top back to a strong bud about 3–4' from the ground. This will encourage branching. If the new tree arrives *with* branches, prune off all but 3–4 branches at the height you'd like for your first tier, about 3–4' from the ground, or higher if you prefer. The lowest scaffold (branch layer) should be very wide to collect as much sun as possible. If too low, these long branches will rest on the ground under the weight of fruit, and the deer will have a field day. Also, it becomes difficult to mow, mulch, etc.

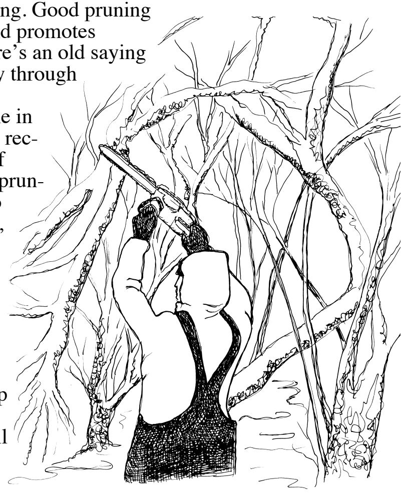
  Some folks choose not to prune at the time of planting and wait to shape the tree in subsequent years. This method is fine, too.
- **Year two**: Trim off root suckers or other odd branches that come up from around the base. Otherwise, leave the tree alone and let it grow.
- **The next few years**: If something looks really crowded, broken or dead, prune it. Otherwise, leave your tree alone and let it grow. If you don't fuss over it too much, you'll get fruit sooner!

Pruning Established Fruit Trees

Once your fruit tree begins to bear, you should prune annually. Good pruning brings sunlight to all parts of your tree. Maximum sunlight encourages more and higher-quality fruit. Sunlight also encourages fruit buds to form for next year's crop. A well-pruned tree will produce larger fruit and will tend toward more annual bearing. Good pruning discourages fungal diseases and promotes greater spray penetration. There's an old saying that a bird should be able to fly through your fruit tree.

Most pruning should be done in late winter or early spring. We recommend a good-quality pair of hand shears and a lightweight pruning saw. You may also wish to invest in long-handled loppers, a pole pruner or a pole saw. Keep your pruning tools sharp for smooth, clean cuts.

Any good book on growing fruit trees will have the information you need. Consult old and new books as well as orcharding articles and develop a system that works for you. Pruning is not difficult and will make a huge difference.



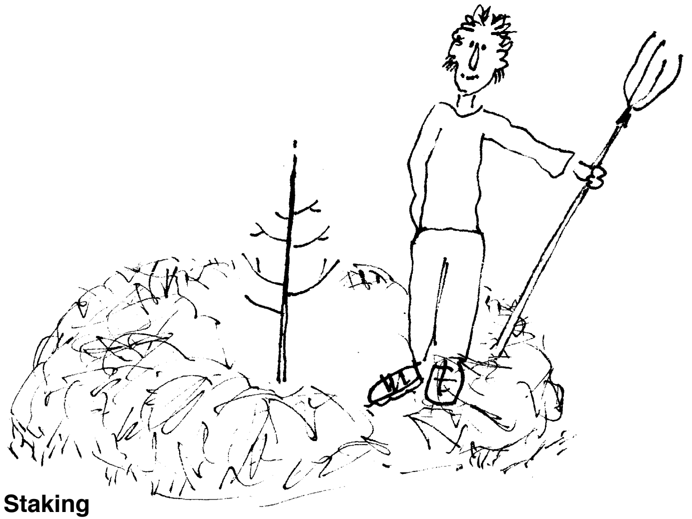
Orchard Ladders

Sturdy lightweight traditionally shaped wooden orchard ladders have wide bottoms for stability and narrow tops for easy handling and placement.

Contact the manufacturer:
Peter Baldwin, (207) 722-3654
baldwinpetert@gmail.com
baldwinappleladders.com

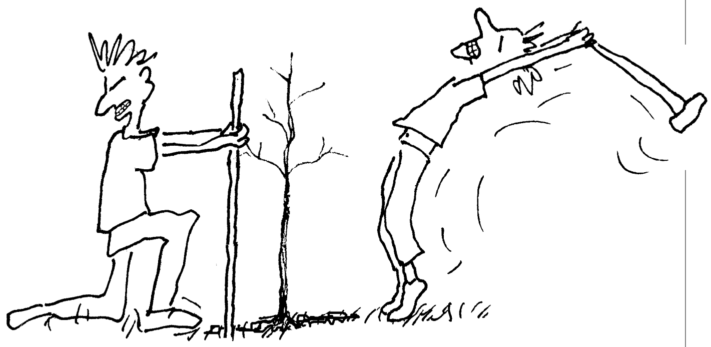
Mulch

Keep weeds and especially grass away from new trees and shrubs. Apply a 2–4" mulch of composted material—leaves, wood chips or hay—out as far as the drip line. A $^{1}/_{2}$–1" topdressing of alfalfa meal beneath the mulch may substantially reduce transplant shock. Keep mulch back several inches from the tree trunk. We lay down cardboard or newspaper and spread mulch on top of it. Mulch encourages earthworms, holds moisture, keeps down weeds, insulates against excess heat and cold, aerates and loosens soils, builds humus and fertilizes feeder roots, 90% of which are within 6" of the surface.



Staking

Newly planted standard-sized fruit trees and ornamental trees seldom need staking. Semi-dwarf and dwarf trees may require staking. If your tree is in a very windy site or develops a leaning habit, staking may help. Drive a stout post near the tree. Wrap the tree trunk with a scrap of burlap or rubber to protect against abrasion. Secure the wrapped part of the tree to the post with string or wire. Tie tree somewhat loosely, as a slight rocking motion will encourage rooting. Once roots are well anchored, the stake may not be needed. Mark small trees with a stake with ribbons to warn operators of lawn mowers, tractors, cars and skidders.



Spacing of Fruit Trees, Nut Trees & Berries

	between plants	between rows
Apples, Dwarf	7-8'	15'
Apples, Semi-dwarf	15'	15'
Apples, Standard	25–30'	25–30'
Asparagus	1–2'	4'
Blackberries	3–4'	6–12'
Blueberries, highbush	3–6'	8–10'
Blueberries, lowbush	1'	1'
Grapes	8'	8–10'
Hazel	4-6'	hedge
Kiwis	10'	10'
Nut trees - orchard	35'	35'
Nut trees - forest	20'	20'
Pears, Asian Pears	20'	20'
Raspberries	2'	6–12'
Stone Fruit	15–20'	15–20'
Strawberries	see instructions, p. 27	
Sweet Cherries	25'	25'

Beware the Apple Borer!

In many parts of central and northern New England the roundheaded appletree borer, *Saperda candida*, is **the number one enemy** of young **apple**, **crabapple** and **quince** trees. If you are growing young apple trees in these locations, you *must* protect your trees from this pest. Farther south and north the borer may not be a pest. If you don't know if they are a problem in your area, check with any grower near you: they'll know. Otherwise, err on the side of caution. This particular borer does not endanger other fruit trees or ornamentals.

Borer beetles lay eggs under the bark near the base of the tree. The developing larvae tunnel through the wood, eventually weakening the tree until it falls over. The trouble sign is small deposits of orange sawdust, called frass, at the base of the tree. Check lower trunks for frass and tunneling in late May, and again in September. Left unchecked, borers usually mean death for young trees.

Here are five strategies for controlling borers:

- **Paint the trunks** Painting is likely the best deterrent, especially if you have more than a few trees to monitor for borers. John has tried a number of recipes and this is his favorite. It's easy and requires no hard-to-find ingredients:

  Mix white *interior* latex paint with joint compound. (The stuff you smear on sheet rock joints and nail holes—you can buy a small tub at any hardware store. Some exterior paint formulations contain ingredients that can harm the tree's phloem.) The consistency should be thick but still quite easy to paint, not glob on. Repaint as needed. This mix will help deter borers and also make detection of infestations easier. Once you locate a borer hole, you'll have to cut or blast it out (see below). Look for the orange frass!

  We are experimenting with a borer-prevention formula using more benign ingredients. It doesn't last or adhere as well as the paint-joint compound mixture, but it appears to work fairly well.

  2 qt quick lime
  4 gal milk
  1 gal boiled linseed oil

  Mix well. Thicken as needed with clay or Surround (available in the **Organic Growers Supply** section of the Fedco Seeds catalog). Apply with a paint brush. Reapply as needed.

- **Cut It Out** Once you've identified a hole or soft spot in the trunk, insert a wire and dig around until you locate and kill the larva. Cut away soft spongy pockets with a knife. Even serious carving is less harmful to the tree than leaving the larvae alive inside.

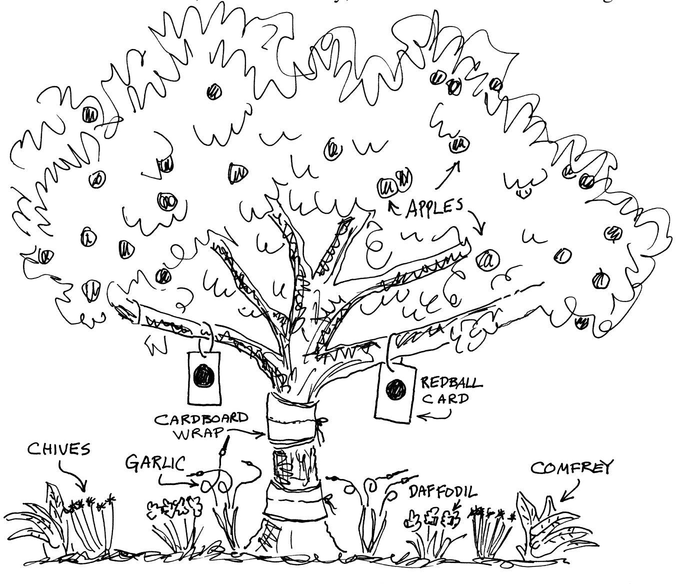
- **Blasted Borers** When you discover a soft spot or hole in the tree, get yourself a can of compressed air (for cleaning computers). Put the long skinny tube nozzle up to the hole and give it a blast. Should do the trick.

- **The Polyculture Deterrent** Borer beetles thrive in shady moist warm environments. Keep grass back at least 6" from the tree base. Trials in our "functional" orchard suggest that a mixed polyculture environment may disguise the apple trees and fool the borers. We plant woody and herbaceous perennials around the trees, keeping them back 12" or so. Borers are lazy opportunists. If there are a lot of apple trees within easy reach, they will attack. Otherwise, you may never see them. The polyculture orchard may present too much work for them.

- **Neem Oil** Recent trials indicate neem oil is effective against borers. You can make a 2% neem solution to spray on trucks, especially the first 8–12" above soil line, once a month from June to September. In a bucket, blend $^{1}/_{3}$ cup neem oil with 2 tsp biodegradeable dish soap until the color lightens, then mix in a gallon of warm water.

  If this seems too involved for your situation, you could also just paint undiluted neem oil, warmed to liquify, onto young tree trunks.

  With either method, treat trunks only; neem oil could burn the foliage.



Scab in the apple orchard

Apple scab (*Venturia unaequalis*) is the most challenging disease for the New England apple grower. Scab is a fungus, spread by spores that overwinter in fallen fruit and leaf litter, rising up in rainy spring weather to cause grief all over again. It appears as small rough black patches on the fruit or foliage. A bit of scab is not a bad thing. It won't hurt you or your tree or fruit. Some growers actually believe that a small amount of scab triggers a beneficial self-protection response in the apple. But a lot of scab can destroy the fruit and even kill the tree. Severity of infection can vary depending on the year, the site, and the variety.

With organic or conventional fungicides as a last resort, what can you do to avoid or minimize scab damage in your trees?

Avoid susceptible varieties. Although nearly all apples are susceptible to some extent, certain varieties are especially vulnerable to scab. In particular, McIntosh and its relatives are scab magnets. These include Cortland, Fameuse and Macoun. If you grow these apples, you'll probably struggle with scab in your orchard. If you can avoid these varieties, you may be able to keep scab to a tolerable level without spraying fungicides. Most heirlooms are susceptible but should be quite tolerant as long as highly susceptible varieties are kept away.

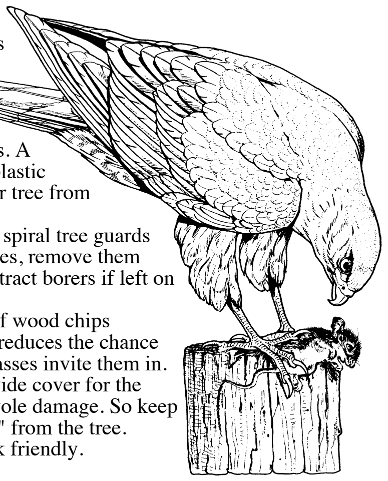
In 1945, Purdue, Rutgers and the University of Illinois began a collaboration to develop scab-immune varieties. Many of these have PRI in their names. (Prima, Priscilla, Williams Pride, etc.) They bred the varieties using *Malus floribunda* as a parent. It contains a gene that imparts scab immunity to the fruit. By crossing and recrossing, they were able to isolate and include this gene in the final introduction. We've offered some of these varieties, including GoldRush from the PRI program, and Liberty from the associated New York breeding program. If you like the fruit from these varieties, growing them can be a good strategy for avoiding scab.

Thin the fruit. In late spring or early summer, we thin all our tree fruit, remove enough fruitlets that the mature fruits won't touch. You want air circulation. Insects also like those places where fruits rub against each other.

Clean up drops and fallen leaves. Scab lives in the drops (fallen fruit), as do insects. Eat the drops, make them into cider, feed them to your livestock or compost them. Some farmers let livestock in the orchard to eat the drops. Also rake up leaves in the fall. Burn, compost or mow them. By practicing good hygiene in the orchard, some growers have been able to grow good McIntosh organically.

> Do plants communicate with us? Do they have souls, as some people claim? I don't know. Perhaps we'll never know. But I have my suspicions.
> –Dr. James A. Duke, *The Green Pharmacy Herbal Handbook*

Protecting Trees from Mice and Voles



Fruit trees and ornamentals are sometimes girdled by mice or voles eating the bark. Girdling will usually kill the tree or shrub. The danger is greatest in winter. Stomp around the trunks after each fresh snowfall to create a packed-ice barrier that will prevent mice from traveling beneath the snow. Keep the grass mowed in the fall and remove large mulch piles from near the trunks. Rodents like to nest in hay more than in chip mulches. A wrap of window screening or a plastic spiral tree guard will protect your tree from being girdled.

If you use screening or plastic spiral tree guards on apple, quince or crabapple trees, remove them from April to October, as they attract borers if left on the tree in the summer.

Our trials show that a mulch of wood chips surrounding young trees greatly reduces the chance of summer vole damage. Tall grasses invite them in. The polyculture model may provide cover for the voles and can result in summer vole damage. So keep the tall perennials back about 12" from the tree.

Also, make your orchard hawk friendly.

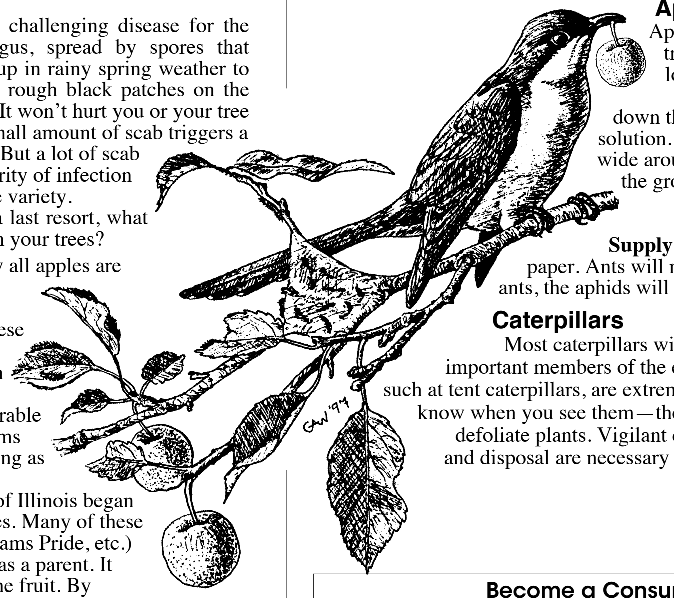
Voles Don't Like Narcissus!

For many years we've been planting daffodils around the base of some of our apple trees. No particular reason; it just looks great. Come to find out that you can beautify your orchard and deter voles at the same time. Plant daffodils in a circle a foot or two away from the base. The tunneling voles don't like the bulbs and will veer away.

We don't have the super-destructive pine voles in our orchard—whether or not the bulbs would deter them, we don't know.

Oh Dear, Deer!

The best deer protection is a collie in the yard. If you don't have a dog or if your orchard is too far from the house, an 8' sheep fence will work. Some people have good luck with electric fences. Small protective fence enclosures can be made by circling your tree with a cylinder of chicken wire or other fencing.



Aphids and ants

Aphids can do a lot of damage to apple trees and they make the young leaves look gross. Whenever you see aphids you will see ants climbing up and down the tree feeding them. Here's an easy solution. Wrap a piece of stiff paper about 6" wide around the trunk about a foot or two off the ground. Tape this "sleeve" to itself but not to the tree. Smear Tanglefoot (available in the **Organic Growers Supply** section of our Seeds catalog) on the paper. Ants will not cross the barrier and, without the ants, the aphids will die. In a day or two no more aphids.

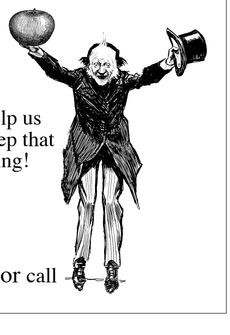
Caterpillars

Most caterpillars will not damage healthy plants and are important members of the environment. However, a few kinds, such at tent caterpillars, are extremely destructive to fruit trees. You'll know when you see them—they hatch in large crowds and rapidly defoliate plants. Vigilant daily observation, manual collection and disposal are necessary from mid-summer to fall.

Become a Consumer-Member!

Join the more than 1100 consumer-members who support our cooperative by contributing $100 membership equity, refundable at any time upon request.

- Membership = ownership. Own a piece of Fedco!
- Your membership equity helps finance our new facility, reducing our interest expense.
- Enjoy benefits such as a 1% discount on all your orders.
- Happy with our products, prices and catalogs? Help us to endure and thrive for many years to come! Keep that humor, those bad puns and occasional rants coming!
- Support our values? Help us fulfill our mission to repopulate the world with plants!



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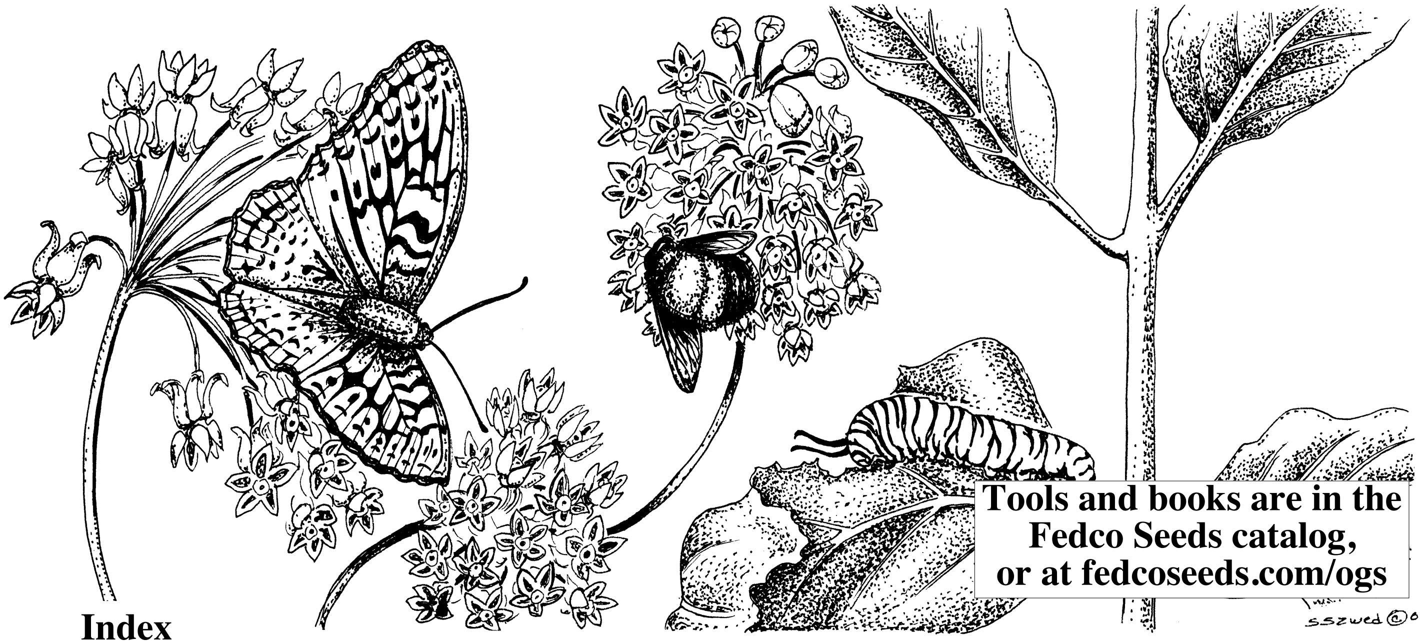

Tools and books are in the Fedco Seeds catalog, or at fedcoseeds.com/ogs

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USDA Hardiness Zone	Average Minimum Temperature
2	-50° to -40°
3	-40° to -30°
4	-30° to -20°
5	-20° to -10°
6	-10° to 0°

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Index inside back cover
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